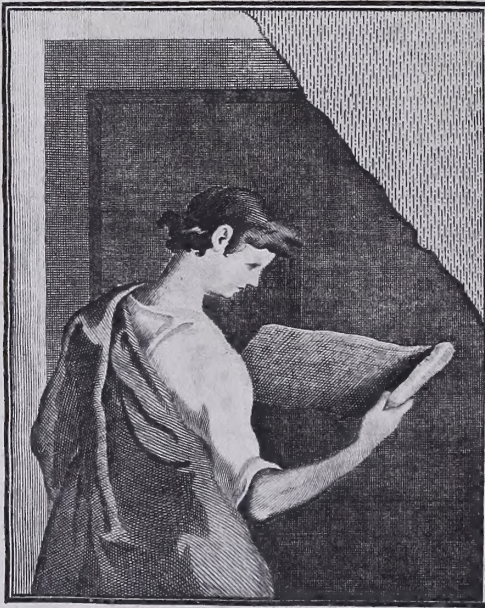
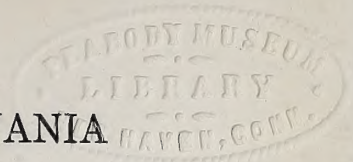




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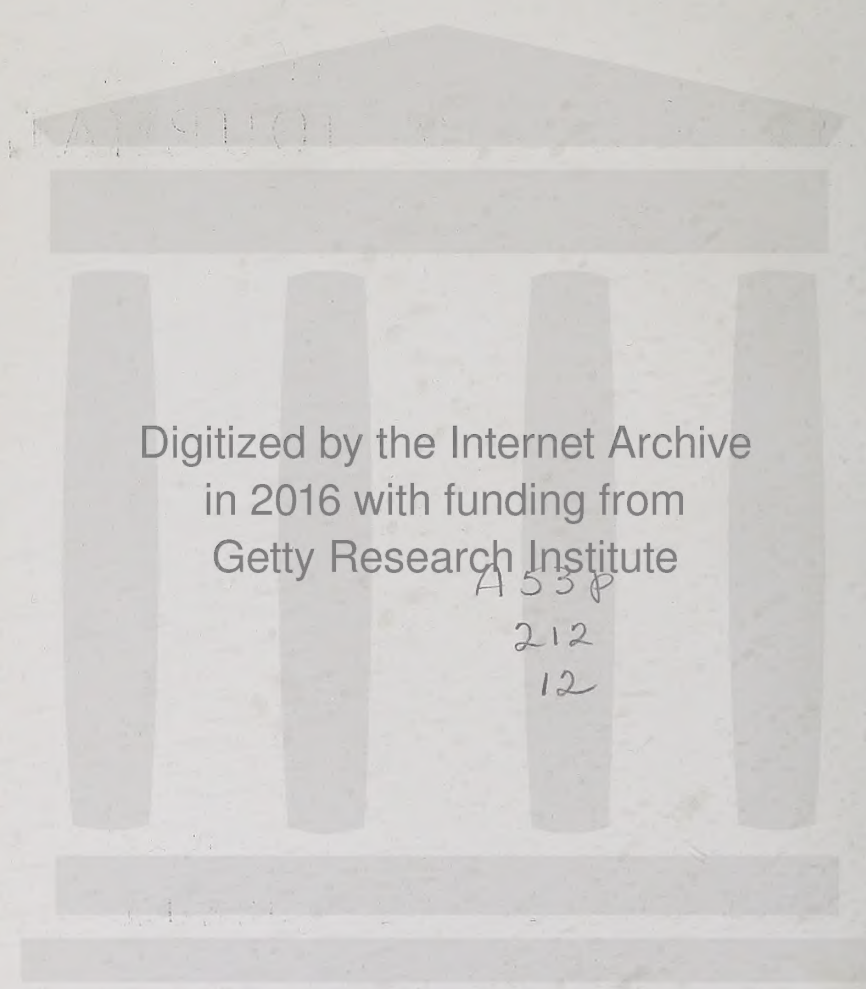
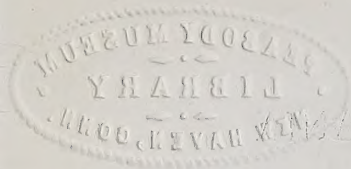
UNIVERSITY OF PENNSYLVANIA

THE MUSEUM JOURNAL

VOLUME XII

THE UNIVERSITY MUSEUM
PHILADELPHIA

1921



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UNIVERSITY OF PENNSYLVANIA

THE MUSEUM JOURNAL

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FOR ART
FOR SCIENCE
FOR CIVILIZATION

PHILADELPHIA, PA.
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¶ The Purposes of the University Museum

¶ To give to Philadelphia a Museum that will be in keeping with its traditions, that will answer to its needs and that will sustain its historic reputé as a Stronghold of Civilization.

¶ To assemble collections that will illustrate the achievements of Mankind in the field of Art, and to cherish and preserve this Heritage from the Past.

¶ To trace the origins of Civilization and to reconstruct the successive steps and the varied episodes that have attended its development.

¶ To encourage the Arts; and to demonstrate the debt that Civilization owes to the Artist and to the Craftsman.

¶ To encourage Research, to send out expeditions to excavate the buried cities of Antiquity and bring to light the records of the Past; to gather and preserve the early Arts and ancient Lore handed down by the vanishing races of Mankind.

¶ To promote a knowledge of Humanity and to disseminate that knowledge by lectures, by publications, by cooperation with the schools and through the medium of the University; to illustrate the unity of all races and the diversity of their Art, to inculcate a better and more sympathetic understanding of all peoples and to afford a just measure of the contribution that each has made to Civilization.

¶ By bringing the people into direct contact with the visible Past and its prolific life, to exert a civilizing and humanizing influence upon our manners and habits of thought.



Drawn by M. Louise Baker.

SAMPLES FROM THE BOOK OF TAPA.

Drawn from pieces of the cloth made from bark by the natives of the South Seas and collected by Captain James Cook. The actual cloths are bound up in the book.

THE CONTENTS

IN the summer of 1919 the Director discovered in a book shop in London a very rare book described by Mr. Hall in this JOURNAL. The Library of the Museum was fortunate enough to acquire this treasure through an appropriation from the funds of the George Leib Harrison Foundation. The book is a curiosity in literature. Its value, which is ethnological and artistic, is determined by the samples of tapa cloth that are bound up with it. These pieces of tapa were collected by Captain James Cook during his voyages of discovery in the South Seas. The unknown author who dedicates his book to a person not named engages our attention hardly less than the samples of cloth that owe their preservation to his intelligent use of them.

It will soon be one hundred and fifty years since Captain James Cook was killed in Hawaii, in the group of islands in the Pacific that he discovered on his last voyage. His death took place in 1779 and the Tapa Book bears the date 1787.

Although the author makes no reference to himself at all, it is clear enough that he was a man of firm character, large intelligence, pronounced opinions, catholic tastes and deep sympathies. It is also a fact that although he is sometimes ungrammatical his use of the English language is picturesque, forceful and full of charm. To those who knew him he must have been an attractive personality with a versatile and entertaining mind, but there is no clue to his identity.

The next question that presents itself has reference to the identity of the hero of the Dedication. He must have been a great man and a public figure. Mr. Hall suggests with entire plausibility that the hero was Warren Hastings whose impeachment was pending at the time the Dedication was written. Indeed Mr. Hall succeeds in showing that the man referred to could be no other than Warren Hastings.

Other copies of the book are in the following Libraries.

Paris, Bibliothèque Nationale.

Honolulu, Bernice Pauahi Bishop Museum.

Salem, Mass., The Peabody Museum.

The Eckley B. Coxe Jr. Expedition to Egypt carried on its work from the beginning of 1915 till the end of 1919. During that time excavations were made at the Pyramids, at Denderah and at Memphis. It was at the latter place that monumental ruins were uncovered. The most interesting of these discoveries from an architectural point of view was the Throne Room in the Royal Palace which is now in process of being cleared by the Expedition. Mr. Fisher, who describes the Throne Room in this JOURNAL was trained in the School of Architecture of the University of Pennsylvania. In conducting the excavations in the Royal Palace he brought this training to bear on his work with advantage, for he was able by a close study of the ruins to reconstruct each portion of the building as the excavations proceeded. The restoration of the Throne Room reproduced in this JOURNAL gives a faithful idea of what that part of the Palace was like before the fire that destroyed it.

In Egypt the Museum has many tons of sculpture and other objects found in the excavations. These will be brought to Philadelphia and set up in the Museum when room shall have been provided by the addition to the building of the Egyptian Hall already planned.

The art of metal working among the ancient peoples of America is so well represented in the collections of the Museum that studies based on these collections are of special interest. Dr. Farabee continues his discussion on these native arts by two articles, one on bronze and one on a special collection of gold ornaments from Ecuador found buried in an earthenware chest and acquired last year by the Museum. For illustration there is reproduced a drawing of a most remarkable bronze knife from the collection obtained in Paris in 1919. The Ecuador gold is illustrated by many selected specimens.

The Museum collection of Central American vases, in stone and in clay, acquired during recent years is the most remarkable in existence. They represent the arts of the ancient Mayas and those of some of their neighbours. Among the latter, the people of the Ulua Valley, first made known by Dr. Gordon from personal exploration, are the most advanced. The perfection of their artistically carved white marble vessels entitles them to a foremost place among the

native American peoples and puts them squarely in the front rank of the world's earlier artisans.

These marble vases from the Ulua Valley, of which those in the University Museum are by far the finest that have come to light, are remarkable artistically. In their excellence, refinement and strength they are equal to the much admired bronze vessels of the Shang, Chou or Han Dynasties of China.

The style of decoration, the motives that make up the design and in fact the whole feeling of these Central American vases present a striking resemblance to the similar attributes of those early Chinese bronzes that are now so much sought by museums and collectors everywhere.

Recent discussion of one of these marble vases has revealed some errors on the part of well known writers that have led Dr. Gordon in this JOURNAL to publish the whole group in such detail that students of Central American and Mexican archæology will be able to study their form and decoration as well as if they had access to the originals.

In the last JOURNAL Dr. Legrain had an article on a fragment of an historical document found in the Museum's collection of clay tablets. A photograph of the fragment accompanied the translation. Since that article was published, Dr. Legrain has found among many unclassified fragments, a small piece of the same historical tablet which he was able to place in its proper relation to the larger fragment already published. A photograph of the two fragments joined, is now reproduced, together with a translation by Dr. Legrain of the new fragment. This is an example of the way in which the scholar who reads the cuneiform script is often able to assemble different fragments of a tablet and join them together upon evidence furnished within the meaning of the text. In the present instance the two fragments had been separated for thousands of years.

A CATALOGUE

OF THE

DIFFERENT SPECIMENS OF CLOTH

COLLECTED IN THE THREE VOYAGES OF

CAPTAIN COOK,

TO THE SOUTHERN HEMISPHERE.

WITH A

PARTICULAR ACCOUNT

OF THE

Manner of the Manufacturing the same in the various Islands of the
S O U T H S E A S ;

PARTLY EXTRACTED FROM

Mr. ANDERSON and REINHOLD FORSTER's Observations,
And the verbal Account of some of the most knowing of the Navigators :

WITH

SOME ANECDOTES THAT HAPPENED TO THEM AMONG
THE NATIVES.

Now properly arraigned and printed

For ALEXANDER SHAW, No. 379, STRAND, LONDON,

MDCCCLXXXVII.

Title page of the Book of Tapa.

THE MUSEUM JOURNAL

VOL. XII

PHILADELPHIA, MARCH, 1921

No. 1

A BOOK OF TAPA

IN the year 1787 there was published in London an interesting and curious book styled a CATALOGUE and illustrated with samples cut from specimens of the *tapa* or bark cloth collected by Cook and his companions during the great explorer's three voyages. The title page and the quaint dedication are reproduced here from a copy of this work lately bought by the University Museum from funds of the George Leib Harrison Foundation. The text is brief, consisting of some observations on the manufacture of bark cloth in Polynesia taken chiefly from the journals of Cook, Anderson, and John Reinhold Forster. The last, with his son George, accompanied Cook as naturalist on his second voyage and thereafter published, among other results of his travels, a book containing some "Remarks on the Human Species," from which our anonymous compiler quotes and which he recommends to the reader's notice with the remark that it has been "much neglected, upon account of Mr. Forster's adhering to that justly exploded system of making everything tally with the ancient dreams of dead and rotten Jews."

There are also, appended to the CATALOGUE proper, "the verbal account of some of the most knowing of the navigators" and "anecdotes that happened to them among the natives" in the form of notes on the items listed. The list contains thirty-nine items, the book forty-three specimens of tapa. The volume has been rebound; possibly four samples have been added since its original publication. A copy in the Peabody Museum of Salem, Massachusetts, contains fifty-six specimens and a list of thirty-nine pieces [Catalogue of the Hawaiian Portion of the Polynesian Collections, 1920, p. 25]. Another copy described by Dr. W. T. Brigham in his book *Ka Hana Kapa* on tapa making [Memoirs of the Bernice Pauahi Bishop

S I R,

THESE are only select specimens for a few friends, but if I was capable to give the public a particular account of the manner of manufacturing cloth in every part of the world, I would not hesitate one moment to dedicate it to you, as there is none more ready to feed the hungry and clothe the naked: would to God it was as much in your power as it is in your heart to wipe the tear from every eye, but that is impossible; for while you was teaching Indian nations how to be happy, you was as much wanted at home, where it is our constant wish that Heaven may long preserve you the support of science, and idol of family and friends.

I with the first navigators to the South Seas had enabled me to give a more circumstantial account of the manner of manufacturing the many kinds of cloth made and imported from thence; as it is surely of the first importance to know the various methods of making that which so much distinguishes the human from the brute creation, especially when the materials differ so much from those of Europe; but in such undertakings fresh provision must be found, honours were to be received, mysterious ceremonies observed amongst those, and such like multitarious engagements, where is the wonder that little more than one single page is consigned to describe forty specimens of cloth, nearly which number I have carefully collected, and here present with a description formed of information from some of the navigators, and my own observations, of the bark of trees of which the cloth is composed.

THE

Museum, III, Honolulu, 1911] has the same number of items in the CATALOGUE; Dr. Brigham does not state whether the specimens bound in the book exceed this number. He describes only thirty-nine, his notes on these being appended to each item in the list, copied usually in full from the CATALOGUE. So far as appears from his comments, the order of items in his copy is assumed to correspond to the arrangement of the samples; in this he appears to be mistaken, at any rate in some instances. This should be apparent in the course of the collation attempted below, in which the Museum's copy of the CATALOGUE is quoted with Dr. Brigham's remarks on each numbered item, and descriptions of and observations on the specimens in the order in which they appear in that copy are appended.

If some of the samples are duplicates, as they seem to be, the number of distinct specimens could readily be reduced to the tally of the printed list. But this principle of reduction might even be so applied as to bring the former number below that count; and there remain the possibilities of the addition of specimens by collectors through whose hands the book may have passed in the one hundred and thirty-four years since its publication by Alexander Shaw; of the removal of specimens—three leaves on which small samples might have been pasted have been cut out; and of an original carelessness of arrangement—there has been no attempt to number the specimens themselves—to confound any attempt to identify particular examples as they stand with the numbers of the list, which is not in any real sense descriptive. The original compiler's chief concern, apart from that in the methods of manufacture, seems to be with the human interest evoked through contact by the proxy, so to speak, of their intimate belongings with the simple people of the Southern Seas. It is with a kind of pleased surprise that he finds these peoples capable of emotions quite other than fierce—"a true sign of gratitude in those people," "a true sense of honour"—and is at pains to record them in the words of "knowing navigators" who had themselves observed the gratifying, if unlooked for, facts.

Of the accounts of the manufacture of bark cloth, but one is from an anonymous navigator. The other narrators quoted are well known. The former appears to have been an ordinary seaman, and to have made the following observations while on shore duty.

"When in the island of Huaheine [one of the Society Islands, of

which Tahiti is the chief], I was ordered to go and cut some wood, and in my way up the country I observed about twenty females taking a large quantity of barks of trees out of a pond where it had lain soaking about a month: they then began to join and form it into cloth; I have seen a piece of cloth of fifty yards completely finished in five or six days after being taken out of the water. They use very few instruments, I never counted above seven. There are very few countries without barks or trees that may be made into cloth. In Britain there are many, and upon the Continent still more. Both the East and the West Indies produce great plenty: but the paper mulberry of the South Sea, and the lace trees of Jamaica, yield the most perfect materials, so that cloth may be produced from either in a few days." Indeed a traveled and a knowing navigator!

The other accounts quoted by our compiler are too lengthy to be reproduced here. A very succinct and, for the present purpose, sufficiently complete exposition of methods is the following by Horatio Hale, taken from the volume on Ethnography and Philology of the Report of the United States (Wilkes) Exploring Expedition, p. 41.

"Many tribes in various parts of the world have the art of making a kind of cloth from the bark of a tree. That which is peculiar to the Polynesian custom is merely the mode adopted, which is common to all the islands, except New Zealand. It consists in peeling off strips of the bark of the paper mulberry [*Broussonetia papyrifera*] or of the breadfruit tree [*Artocarpus incisa*], which are divested of the outer cuticle, and after being soaked for a time in water, are laid upon a smooth plank, and beaten out, by repeated blows of a mallet, to a substance not unlike thick but flexible paper; sometimes, however, it is so fine as to resemble gauze. The strips are united by overlaying their edges and beating them together. The mallet used . . . is a stick rather more than a foot in length and five or six inches in circumference, either square, or, in some islands, nearly round, and creased or channeled with parallel grooves from one end to the other."

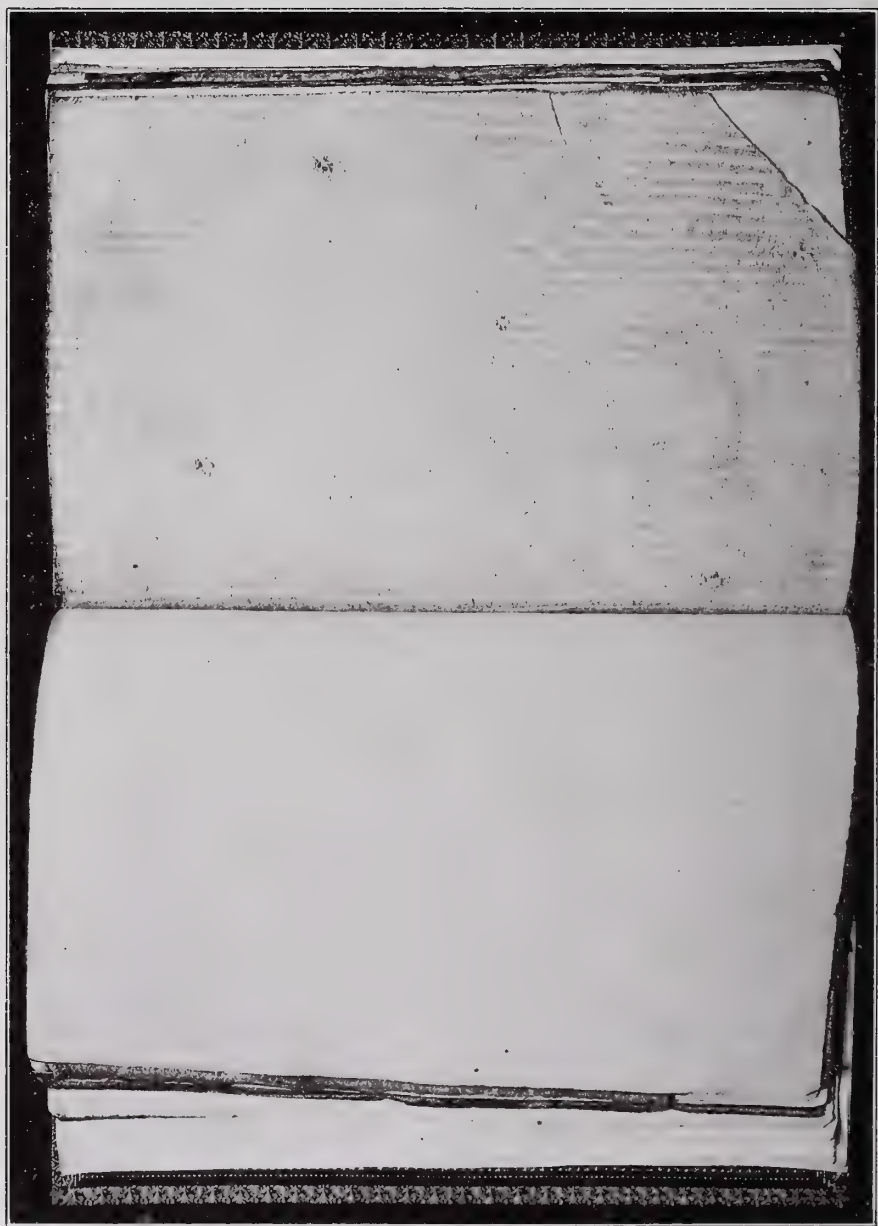
This needs a little supplementing and one amendment. The cultivation of the paper mulberry was an invariable feature of the industrial life of the Polynesians. Even to New Zealand it had accompanied their wide sea borne wanderings. But the employment of its product there was limited, seemed only a memento of

old, half remembered, far off ways. The climate required the use of more substantial coverings for the body than its fragile bast provided, but they had preserved its cultivation and use, though only for purposes of ornament, it appears. "Our island cloth," writes Banks [Journal, p. 204], "which used to be so much esteemed has now entirely lost its value. The natives have for some days past told us that they have some of it ashore, and showed us small pieces in their ears, which they said was of their own manufacture." During a visit on shore, "they showed us a great rarity, six plants of what they called *aouta*, from whence they make cloth like that of Otahite. The plant proved exactly the same as the name is the same, *Morus papyrifera*, Linn. (the Paper Mulberry) We have not yet seen among them pieces large enough for any use, but only bits sticking into the holes of their ears" [p. 206]. Wallis [Cook I, i, 48] also mentions this.

As for the trees which yielded bast to the Polynesians, we must add to Hale's list a species of fig [*Ficus prolixa*] and one of the nettles [*Pipturus albidus*].

A paste made of arrowroot was sometimes used for joining strips of tapa endwise, and occasionally also to ensure the better cohesion of layers of the bast, when a cloth consisted of more than one thickness. The dyes used, apart from ochreous earths, were for the most part vegetable products. To help in the application of the chiefly rectilineal designs rulers were employed, as well as stamps; in Tahiti, fern fronds were used as stamps. The manufacture was everywhere women's work. But "though the native cloth worn by the inhabitants [of Tahiti] was made by the women, there were some kinds used in the temples in the service of the idols, which were made by men, and which it was necessary, according to the declarations of the priest, should be beaten by night" [Ellis, *Polynesian Researches*, i, 186].

There are a few terms, quoted from Ka Hana Kapa, indicating the nature of the beater used in the manufacture of bark cloth, or of the impression left by the beater, with a few other words, which require explanation. They are as follows: *alaea*, ochre mixed with oil; *halua*, a pattern on beaters, two sets of parallel lines crossing at right angles; *hoopai*, the common beater, with close parallel ridges; *konane*, said of a beater of which the surface is divided into fairly large squares separated by grooves at right angles; *mahuna*, spotted, or oiled, tapa; *mole*, smooth; *maka upena*, "meshes of a



The Book of Tapa open. The right hand side shows a piece of the tapa from which a corner has been cut.

net"; *pawehe*, said of a pattern showing two sets of parallel lines crossing at an angle not a right angle; *pepehi*, a beater with ridges differing from those of the hoopai in being rounded at the top; *pupu*, said of an impression made by a beater having a pitted surface; *upete* (Samoan), a form used for printing tapa.

The name tapa, which is now very generally used to denote the bark or bast cloth of the Polynesians, is found in that sense only in Easter Island, in Mangareva, in the Marquesas, and in Hawaii (in the form Kapa). In Tahiti, *tape* means a fragment of cloth. The original signification of the word appears to have been edge or side. Thus, in Niue or Savage Island, it means side; in New Zealand, margin, edge, brim of a vessel; in Hawaii, besides the specialized sense, it means bank, shore, side; Tahitian has the word *tapemana*, meaning edge of the deep water. In the last two cases the general sense has become specialized into that of an edge or line of demarcation between land and water. In Easter Island and in Tahiti we see a specialization of the general meaning following a different line. In the former place, the word has, besides the meaning cloth, also the sense of groin; in Tahitian the word *toutaba* (in which *tou* or *tau* is apparently a collective particle) signifies the glands of the groin. Here the meaning of the word has become applied to a side or edge of the trunk or body. It is a third line of specialization which has given us the meaning of cloth. In Tonga tapa means a border or edge of anything; in Samoa, a near neighbour of Tonga, it means the uncoloured margin or border of a piece of bark cloth; in Mangareva the final transference of meaning from a part of the cloth to the whole has taken place: there the word means not only the border of a cloth but also bark cloth in general [Churchill, *The Polynesian Wanderings*, p. 248; Easter Island, p. 285; Finsch, *Südseearbeiten*, p. 361; *A Voyage round the World performed . . . by Lewis de Bougainville*, translated from the French by John Reinhold Forster, p. 475].

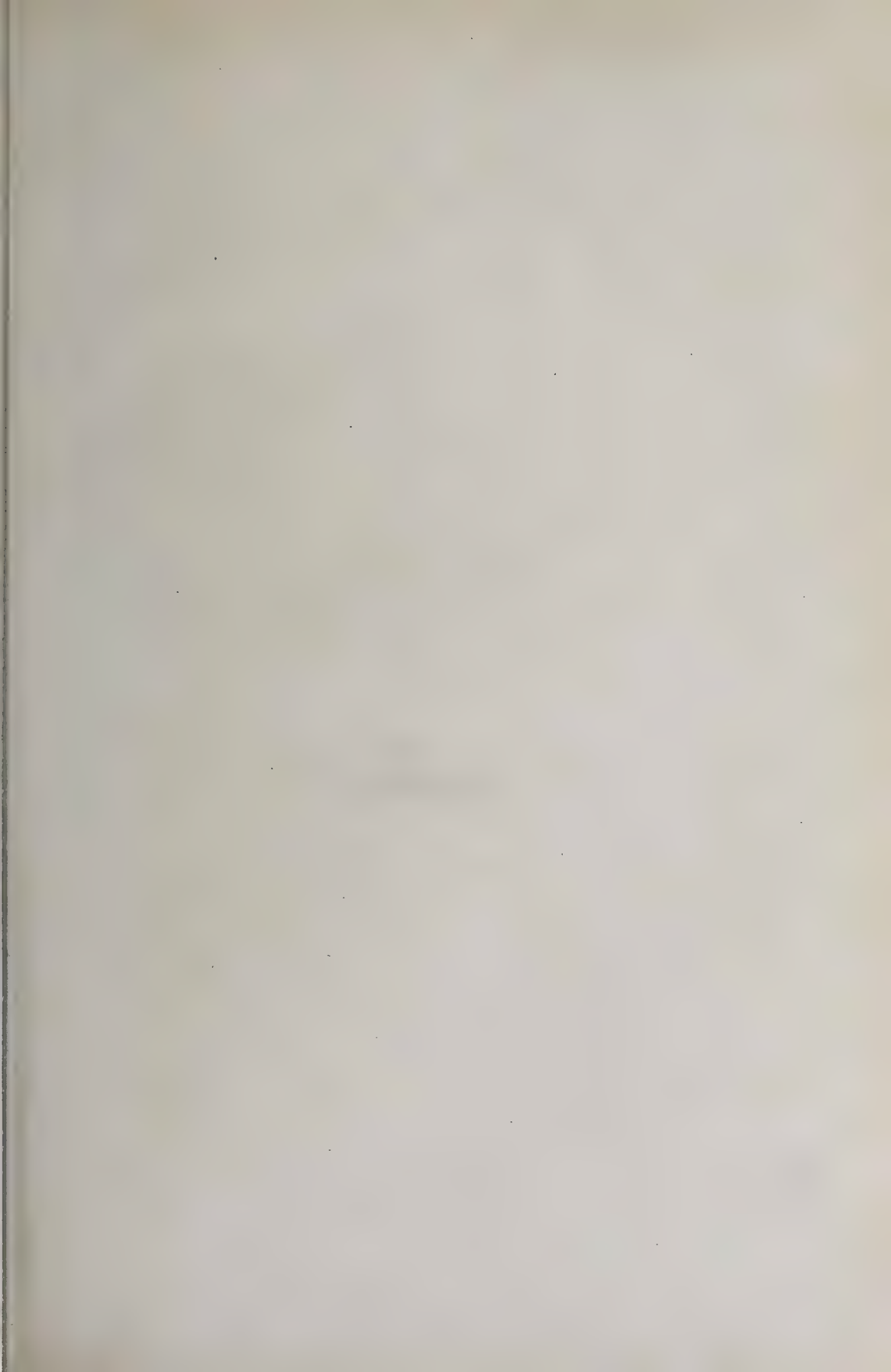
The uses to which the bark cloth was put were many and varied. Its principal use was for clothing, chiefly in the form of loin cloths for men or women, breech cloths for the men, mantles or cloaks for both sexes. By the use of a resinous infusion of the bark of a certain tree the cloth could be rendered fairly waterproof. But tapa was also an important medium of exchange and an element of wealth: as such it was presented to distinguished visitors as a mark of favour. It had also many uses connected with ceremonial and religious

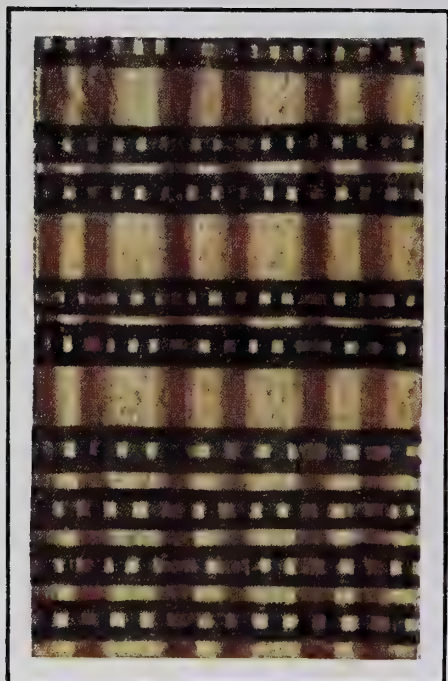
occasions, such as the negotiation of a treaty, offerings to the gods, naval reviews, funeral rites—as flags of the gods or of kings, wrappings of sacrificial animals or of other sacred objects, vestments, etc. In New Zealand, where the use of the *aute* (plant or cloth) was becoming obsolete in Cook's time and was extinct in the thirties of the last century, the cloth was the special appanage of chiefs, who were traditionally, though not actually, "girded with *aute*." There also it was used for making kites and as wrappings for articles of value [Letter of S. Percy Smith to Dr. Brigham, quoted in Ka Hana Kapa, pp. 17, 18].

At the close of his dedication the compiler of the CATALOGUE observes that he "here presents" together with his precious specimens of outlandish arts "a description formed of information from some of the navigators, and my own observations." Even if we are to take his "observations," as we probably must, since he speaks nowhere on his own authority, as those of one whose voyaging was confined to the safely charted shelves and pages of the library, we cannot refuse to him our gratitude for his share in the preservation of these relics of a vanishing race, and our sympathy with his admiration for the gallant seamen who were carrying his country's flag to the remotest corners of the seven seas and for the great proconsul who had but lately returned from "teaching Indian nations how to be happy" to learn that the Mother of Parliaments is sometimes a none too tender stepmother to her country's greatest sons. Warren Hastings had returned from India in 1785, two years before the publication of this dedication; within another year he was to be called to the bar of the House to answer charges of "high crimes and misdemeanours" put forward with all the eloquence and partisan animus of Burke and Fox and Sheridan. There cannot be much doubt that the letter of dedication is addressed to the first titular Governor General of India.¹

In the discussion of the CATALOGUE which follows, the Arabic

¹ As to Warren Hastings in the capacity of "the support of science," it may be recalled that he was a promoter, if not the founder, of the Royal Asiatic Society of Bengal; that emissaries of his visited Tibet and the interior of Cochin China; that he caused a survey to be made of the shores of the Red Sea. He was greatly interested in raising the intellectual standard required for employment in the Indian Civil Service (or, as it was then, the service of the East India Company), and a project formed by him looking to that end resulted in the founding of Haileybury College at a later date. He also at one time formed a plan for endowing a professorship of Persian either at Oxford or at his proposed seminary for "Indian civilians."





Drawn by M. Louise Baker.

SAMPLES OF STUFF FROM THE BOOK OF TAPA.

The pieces of cloth are bound up in the book, having been collected by Captain James Cook among the natives of the South Sea Islands.

numerals are those used by the compiler; the Roman numerals refer to the actual order of the specimens in the University Museum's copy of the CATALOGUE.

THE CATALOGUE

"Specimen 1. From New Amsterdam; and made to resist rain, by being smeared over with the juice of a glutenous herb or plant, before described." Dr. Brigham remarks on this: "A thin cloth printed brown with the upete, showing pattern on both sides." He refers to Figs. 17 and 18 in Ka Hana Kapa, which are photographs of a Tongan tapa. New Amsterdam is the old name for Tongatabu. The specimen referred to in the CATALOGUE may be either XII, XXI, or XXIX, which are all Tongan.

I. A dark brown tapa beaten so thin as to be transparent, even holed in several places. One side has a glazed appearance, but it would certainly not resist rain. Except for the beater used, this specimen is almost identical with a sample (ANS 10502) in the Academy of Natural Sciences, which is taken from a set of bed-clothes in the Bernice Pauahi Bishop Museum (2404), once the property of the Princess Pauahi. The imprint of the beater in the latter is an ordinary hoopai; in the former hoopai halua, very well marked. This is a Hawaiian tapa.

"2. From Otaheite [Tahiti]. This is used to spread below the chiefs while at dinner under the trees." Brigham: "Thin, tough, white; beat is hoopai, very fine."

II. A white tapa composed of several layers, each beaten to a lacelike thinness; the whole somewhat imperfectly felted together to form a soft, fairly thick material. Both sides, but one particularly, show distinct markings of a not very fine hoopai beater. It may be Tahitian, and may be the original No. 2.

"3. From Sandwich island. This was no larger than a common tablecloth; the dyes are mattie ficues and burnt cocoanut mixed with the oil of the same." Brigham: "Coarse fibre, mole, painted with irregular stripes of black crossed by others of red at an angle of 45 degrees, both series in pairs." As to the dye being "mattie ficues," he remarks "Not so, but red ochre." "Sandwich island" is Hawaii. "Mattie ficues" is the *mate* fig (*Ficus tinctoria* Forst.) of Tahiti.

III. This is plain white, of six layers very loosely felted together,

if at all; such cohesion as there is may be accidental. The texture is very like that of II, but more lacelike. The mark of the beater (hoopai) is barely distinguishable. This may be a Hawaiian *kapa moe*, or set of bedclothes. It is obviously not the one referred to in the CATALOGUE under No. 3.

"4. This from the same place; and the dyes of the consistence just mentioned." Brigham: "A small bit of thick mole, with the figures as shown in Plate W, 1." This remark of Dr. Brigham's is applicable to No. XXXVI.

IV. Of a stiff, papery consistency. On an originally white ground there are closely ruled black lines, sometimes coalescing, on each side of a pair of red stripes apparently painted over yellow. Hawaiian (Plate I, 3).

"5. Is also from Sandwich island and very strong. It resists water pretty well; the dye is the same as the former." Dr. Brigham quotes the original observation concerning strength and resistance to water, and adds "Mamaki hoopai. . . Dyed a reddish brown." "Mamaki" refers to the material, *Pipturus albidus*, one of the nettles.

V. The decoration of this piece is illustrated in Brigham, p. 109, Fig. 6 [Cf. op. cit. Plate W, 2] and identified as Hawaiian [Op. cit., p. 107 and footnote]. It is also identified by him as No. 8 in his copy of the CATALOGUE. The same yellow tinge appears to underlie the red stripes as in IV. This may be due to an ingredient of the dye (Plate II, 1).

"6. From Otaheite, used for bedding." Brigham: "Tahiti. Thick, white and feltlike; in two layers not well united."

VI. A variant of the pattern shown in IV. The black lines are arranged in groups of three separated by uncoloured spaces of the natural ground, each about the same width as that occupied by a black lined space. A double red stripe is juxtaposed to one of the latter. A single red line crosses these groups diagonally, at what intervals does not appear, owing to the small size of the specimen. The tapa is not so stiff as, and somewhat thicker than, IV. Hawaiian (Plate I, 9).

"7. From Otaheite; wore . . . by the common people in the rainy season; it is glazed as number one." Brigham: "A hard, ribbed fabric, dyed red."

VII. Identical with IV. A smaller piece.

"8. Was six yards square; it is a masterpiece of the Sandwich island manufacture, and wore by the ladies of honour; the dyes are

the same as three and four, but finer ground." Brigham: "Mole, coloured as shown in Pl. W, 2. . . . To the small fragment from which the author [Brigham] painted the plate referred to has since been added a much larger piece from the Florence collection of Cook's kapa by Dr. E. H. Giglioli, and there is little doubt that both are from the same large specimen." This is applicable to V. The red and black lines in Pl. W, 2, cross each other not at right angles as they do in V and in Brigham, Fig. 64, so that if these are all taken "from the same large specimen," the pattern of that must vary somewhat in different parts.

VIII. This is thick, of close texture, strongly ribbed, and, so to speak, woolly to the touch. It is not of paper mulberry bark, probably of that of the breadfruit [*Artocarpus incisa*]. On a white ground are painted at intervals groups of alternately black and red lines at right angles to the direction of the ribs. There is a hole in this specimen, marking the space which was originally occupied by a knotted tie or stitch, as in XIII, XXIII, XXVI, and XXX. Tahitian (Plate I, 7).

"9. From Otaheite; wore by the people in fine weather; it is made of the outer rind of the mulberry tree." Brigham: "Tahiti. A rather rough specimen with transverse ribs. It appears to have been dyed yellow, but has now faded out." Brigham queries the "outer rind" of the above quotation. Of the ribbed specimens included in this book (VIII, XIII, XXIII, XXVI, and XXX) none appears to have been originally dyed yellow and then to have faded; all of these, and especially XXIII, seem to contain stiff, woody fibres which are cut at right angles by the ribs or ridges produced by a coarsely grooved beater. It seems possible that they may be made of the whole, or very slightly scraped, bark.

IX. Plain white, like III, but with the layers closely felted. It may be Tahitian or Hawaiian. It is clearly not the No. 9 of the CATALOGUE. As compared with II, it is of a softer consistency, less closely compacted.

"10. From ditto. But somewhat finer." Brigham: "Tahiti. White, thick and soft;" this would be applicable to II or IX. The CATALOGUE observation is more appropriate to X, which may in fact be the original No. 10.

X. An extremely delicate and gauzelike but stiff, papery example of beautiful workmanship. Probably Tahitian, and possibly the original No. 10 or 11. The beater is fine hoopai.

"11. From ditto; ditto, but of a stronger consistency." Brigham: "Tahiti. A strong, hoopai specimen of stiff, thin, white kapa"—an exact description of X.

XI. Yellow, fine, not quite so stiff as X. The beater is a not very fine hoopai halua. Probably Tahitian.

"12. From ditto; very fine, and dyed with fine yellow juice." Brigham: "Tahiti? Soft, yellow, and from the beat, which seems to be mole halua pupu, I should attribute it to Hawaii." This may be XI, the beater used on which was simply cross hatched with not very close groovings at right angles. There are only occasional and quite irregular compactions of the tissues such as would be due to the use of a beater having pupu or pits in the middle of the small squares formed by the groovings.

XII. A fairly thick papery tapa of two (partly three) layers, with a printed design. The surface is, so far as can be judged from the specimen, divided into rectangles by heavy dark brown lines. These compartments are filled with impressions in lighter reddish brown, not very well defined, of straight lines and of loops. It is from Tonga.

"13. From ditto; used in religious ceremonies." Brigham: "Tahiti. Yellowish, with a zigzag pattern painted in brown; a very small fragment." This may refer to XXVIII.

XIII. This is unpainted tapa of precisely the same kind as VIII. It contains five ties or stitches made, apparently, with narrow strips of tapa and forming a quincunx.

So far as appears from Dr. Brigham's text, he accepts the order of the specimens in their arrangement in his copy of the CATALOGUE as corresponding to that of the printed list. It is by this time abundantly clear that that is far from being the case in the copy we are considering. In no instance is it possible to identify a given piece of tapa from the list, which does not aim at description in most cases. When it does, this is so vague as to be useless. The singularity of the stitched or tied pieces, whether the device is structural or merely ornamental, seems to point to the employment of this kind of tapa for a special, perhaps religious or ceremonial, purpose. The only allusion to what may have been a similar peculiarity that I have been able to discover refers to Easter Island. This is a short passage in Cook's Journal of his Second Voyage, Vol. i, p. 290: "Their [the Easter Islanders'] clothing is a piece or two of quilted cloth about six feet by four, or a mat." But these

ribbed tapas are, I think, undoubtedly Tahitian; and XIII may be the Tahitian cloth "used in religious ceremonies" which the compiler lists as No. 13.

"14. From ditto; used in the mourning dresses." Brigham: "Tahiti. Quite like a kind made by the Hawaiians. Beat hoopai pawehe; grey on under side, dark brown on upper marked with darker parallel lines."

XIV is an interesting example of an effort to produce artificially a decorative effect similar to a result probably only incidentally decorative and obtained by more laborious means as in XXIV and XXV, which are instances of a process of manufacture reported from Tahiti in 1796-98. "When the brown cloth is worn out they bark the branches of the breadfruit, and mix the old brown cloth with the new bark, beating them together, which makes a mottled piece: this they dip in a light yellow prepared from the root of a shrub called nono, which gives it a beautiful appearance" [Voyage of the Duff, quoted by Brigham, p. 27]. But this method was also followed in Hawaii. "If beaten together with red bits [of kapa] the kapa is called paiula" [Davida Malo's "Antiquities," Cap. XVI, Par. 7, quoted by Brigham, p. 49. See also Brigham, Pl. 35 and descriptive note]. XIV is a soft tapa, with a well defined maka upena beat. On a yellow ground there are large irregular blotches of dark brown, and smaller, also irregular, markings of light red. The brown blotches go through the tapa, which is thin and would be easily penetrated by a heavy pigment or stain. The fainter red markings, evidently of a dye of lighter consistency, evaporating more readily, have passed through only here and there and only to a small degree. The brown and the red were applied to opposite surfaces of the material. From the impression of the beater and the fact that red appears here in imitation of the composite cloth, the making of which the Hawaiian Malo refers to, there seems to be little doubt that this cloth is from Hawaii, and is not therefore the No. 14 of the CATALOGUE (Plate I, 6).

"15. From ditto: used at the human sacrifice." Brigham: "Tahiti. A thick, soft kapa originally dyed yellow and stamped red with end of a bambu, Fig. 7." Dr. Brigham also remarks here, "the Tahitians did not have human sacrifices." His first remark applies to XXXVIII. With regard to his second observation it would seem to be sufficiently refuted by various passages from the published works of the earliest European visitors to Tahiti. Bou-

gainville took away with him from the island a native from whom he received a certain amount of information on the subject of Tahitian customs. In John Reinhold Forster's translation (1772) of Bougainville's Voyage round the World the following passage occurs.

"What we understand with certainty [as to their religion] is, that when the moon has a certain aspect, which they call *Malama Tamai*, or moon in state of war (an aspect in which we have not been able to distinguish any characteristic mark, by which it could be defined), they sacrifice human victims" [pp. 255, 256]. Bougainville's voyage occupied the years 1766-1769.

Cook (III, ii, 30ff.), who calls attention to Bougainville's statement, has a circumstantial account, covering several pages, of the ceremonies attending human sacrifices in Tahiti, in which the following passages occur. "In the morning of the 1st of September a messenger arrived from [Towha] to acquaint Otoo, that he had killed a man to be sacrificed to the *Eatooa*, to implore the assistance of the god against Eimeo. This act of worship was to be performed at the great *Morai* at Attahooroo. . . . The unhappy victim offered to be the object of their worship upon this occasion . . . as we were told, was . . . one of the lowest class of the people. But . . . I could not learn, that he had been pitched upon, on account of any particular crime, committed by him, meriting death. It is certain, however, that they generally make choice of such guilty persons for their sacrifices; or else of common. low, fellows," vagrants. Cook witnessed the ceremonies which he proceeds to describe in September, 1777.

According to Ellis (Polynesian Researches, i, 276 ff.) a whole series of such sacrifices was offered on the outbreak of hostilities to Oro or others of the gods of war. The three passages agree in relating this ceremonial bloodshed to a state of war. Ellis's work includes information obtained by himself and others intimately associated with the Society Islands during the first thirty years of the last century.

XV is a thin rather papery tapa with well defined markings, which cannot be clearly seen unless the specimen is held up against the light. They are of a curious meshlike appearance produced by a beater which was apparently a variety of *halua maka upena* similar to Brigham's Figs. 36 and 37, Nos. 19 and 20. This tapa is Hawaiian (Plate I, 4)

"16. From Sandwich island [Hawaii]; the dye the same as number nine, laid on with a small reed in the hand." Brigham: "Hawaiian. A thick, opaque, dark brown." Referring to the above description he says "that number is not of the same color even allowing for fading." The CATALOGUE may refer to XX, XXXIX, or XLIII.

XVI is a soft tapa of two layers decorated with heavy stamped black lines and cross hatching. If this specimen was added to the original selection by a later collector, as some of these pieces may have been, it may be Fijian, to judge from the character of the decoration. On the other hand, Fijian culture has been greatly influenced by that of Tonga; and it must also be borne in mind that, though Cook did not visit the Fijian islands, he might easily have received from the Tongans a gift of Fijian cloth obtained by them in trade. The printing of tapa with clearly defined rectilinear designs from a carefully carved die reached its greatest perfection in Fiji. In view of all these facts it is not possible to decide whether or not the cloth from which this sample was taken was collected in Tonga (Plate I, 1).

"17. From Otaheite; beat with a grooved piece of wood, and used as a mat." Brigham: "Tahiti. White and ribbed like corduroy." These observations may refer to either XXVI or XIII, but that concerning use as a mat probably not to the painted ribbed Tahitian tapas, VIII, XXIII, and XXVII. All Polynesian tapa is "beat with a grooved piece of wood." The single reference in the list to this fact makes it probable that the compiler had in mind these heavily ribbed specimens, the evidence of the use of a grooved beater on them being so plain.

XVII is a very fine tapa of close texture, thin and soft, dyed brown. The marks of a closely, sharply ridged hoopai beater are beautifully defined. It corresponds closely to a specimen in the Academy of Natural Sciences, ANS 10519, which was cut from an example in the Bishop Museum of Honolulu, No. 2495.

"18. The very finest of the inner coat of the mulberry; and wore by the chiefs of Otaheite. Some of the seamen were sent ashore to bring fresh provisions on board; and not having an opportunity to return immediately, one of them wandered a little way up the country, where he saw some children at play, which to his surprise they all left, and surrounded him, making many antic gestures; at last a girl, about fourteen years of age, made a leap at him, at

the same time endeavoured to seize a few red feathers which he had stuck in his cap, which he directly took out and presented her; upon which she made off with amazing swiftness, and the rest after her; he then returned to his companions, who were preparing to go on board. It was now the cool of the evening, when she came down to the water-side, and singling him out from the rest, presented him the piece of cloth from which this was cut. A true sign of gratitude in those people." Dr. Brigham identifies this with "a very fine white hoopai" of Tahiti.

XVIII is a stiff papery brownish yellow cloth with dark red or magenta stripes, either painted freehand or carelessly ruled. It may be Tahitian.

"19. Made out of old cloth for bedding to the common people." Dr. Brigham's comment, "a brown, thin, hoopai fabric," of Tahiti, "soft and suitable" seems to refer to a cloth like XVII, though one would think that to be rather too delicate to be suitable for the purpose named by the compiler. XIX, which is stained and dirty, is quite soft enough to be suitable. It was originally white and closely resembles II, III, and IX. It may be either Hawaiian or Tahitian.

"20. From Sandwich island, and grooved with a piece of wood." This is the second and only other case in which the compiler refers to the mark of the beater on the tapa. Brigham comments: "Of fine white texture pepehi grooved."

XX is stained dark brown on the upper of the two layers of which it is composed. The colour has soaked through the second layer. It has been glazed or waterproofed; and so far as this quality is concerned may be referred to any one of the CATALOGUE numbers 1, 5, 7, 24, or 33, as there is no definite mark by which it can certainly be referred to one of the three localities, New Amsterdam (Tongatabu), Sandwich Island (Hawaii), Otaheite (Tahiti).

"21. From Otaheite; it was not fully completed." Brigham: "Tahiti. A thin white kapa, ruled in black. The pattern was like Pl. 34, 2." The reference is to Ka Hana Kapa, in which is figured a design similar to XVI. It appears to be a typical example of tapa decoration of the Tonga-Fiji-Samoa region.

XXI is a Tongan tapa of three thin layers stamped in brown, like XII.

"22. From Sandwich island; finely manufactured." Brigham: "Hawaiian. Fine thin kapa ruled in black with broader lines in alaea red." This is applicable to XXXIV, IV or VII. XXII is a fine white tapa, Hawaiian or Tahitian, like X, XXXI, XL, and XLII.

"23. From ditto; wore by the priests." Brigham: "Hawaiian. The fragment (now half its former size) is too small to make out the pattern painted in red and black upon a thick leathery kapa, ribbed on the reverse. The general character is shown in Pl. S, 1, left-half." Plate S, 1 (Ka Hana Kapa) shows, in the designated half a pattern of small grill like chequered squares (black on white), outlined in red. In two places this outline is thickened along two adjacent sides of contiguous squares, so that two heavy diagonal zigzags are formed across the panel. The middle of the zigzag is picked out with a serpentine white line. None of the pieces of tapa considered here has any such design. XXIII is a brown ribbed tapa of rather brittle fibre. Reference has already been made to it under VIII.

"24. From ditto; wore by the young women, and oiled over to resist water." Brigham: "Hawaiian. Thin mole mahuna kapa."

XXIV and XXV have already been referred to under XIV. Both are extremely fine tapas beaten to the thinness of tissue paper. XXIV is white, XXV light canary colour. They are probably Tahitian.

"25. An undergarment; sometimes used for ornament; dye the same as before." Probably "dye" means the oiling referred to under 24. "Similar in texture to the last but marked with dark red stripes," according to Dr. Brigham.

"26. From Owyhee [Hawaii], used as ornaments upon their canoes." Brigham: "Hawaiian. Thick white (probably once yellow or pink) with a texture like chamois leather."

XXVI has been mentioned above under VIII and 9. There is no reason to suppose that it was "once yellow or pink," but its texture might possibly be described as being like chamois leather."

"27. From Otaheite; used by the chiefs for sitting on." Brigham: "Tahiti. White, poorly beaten and fibrous but soft."

XXVII. In Ka Hana Kapa, on p. 106, Dr. Brigham speaks of "a thick fluted Tahitian tapa, which is painted red on the under side. . . . The upper side is painted with nearly black zigzags on a light brown ground; the markings are on alternate flutings." This description almost exactly suits XXVII, with the exceptions that the "light brown ground" was probably originally white, and the zigzags "on the alternate flutings" are here thick straight lines. It is pasted in the book so that the red side is the upper. This is probably the cloth described in the Voyage of the Duff (quoted in Brigham, p. 27): "after being half worn it may be dyed brown

[? brownish red, as here], and lined with white, by pasting two cloths together." The layers are easily distinguishable.

"28. Used as a sash, and under garments for the dancers at Otaheite." Brigham: "Tahitian. Thin, white, papery with irregular brown blotches." This is undoubtedly XXIV, so far as Dr. Brigham's description is concerned. The compiler's account of its use would also be applicable. It resembles the fine tapa worn as turbans by the Fijians.

XXVIII is a very small sample of stiff, fairly thick tapa. The decoration consists of wavy red stripes between groups of black, perhaps ruled, lines. It is Hawaiian (Plate II, 2).

"29. The same as twenty-five, but rather smaller stripes." Brigham: "Hawaiian. Kapa mahuna with lines in groups of three."

XXIX consists of three layers printed in brown with broad stripes arranged in lozenges suggesting an imitation of basketry or matting. It shows traces of glazing or waterproofing. It is probably a Tongan tapa.

"30. From Owyhie, a covering for the common people." Brigham: "Hawaiian. A thick feltlike kapa of several layers, loosely beaten together; white, slightly smeared with red on one side." II, IX, and XIX might answer to this description. XIX has two faint pink blotches on one side.

XXX. See VIII and 9. The ribs or ridges are somewhat less regular in this example. There are two "stitches" or knots. The original bright red dye has faded in streaks. Tahitian (Plate I, 2).

"31. The same as number three, but coarser." Brigham: "Hawaiian. Soft mole kapa resembling No. 3, but with finer dark lines in threes with wider red parallel lines and four finer red crossing at a slight angle. For the general effect see Pl. H, 2. A number of samples of this style were in Cook's collection." There is no example of this decoration in the Museum's copy of the book.

XXXI is like X but softer. In the latter respect it resembles XLII, while XL has the stiffness of X. These delicate tapas with the fine diagonal hoopai lining may be either Tahitian or Hawaiian.

"32. From Otaheite, wore by the chiefs going to war." Brigham: "Tahitian. Rather soft, white with a slight red smear on one side." As to its being a war garment of the chiefs he remarks "probably as malo," i. e. as loin cloth.

XXXII is a fine white tapa like X and XL. The impress of the beater shows the ridges running vertically, but this may be due to the manner in which the sample was cut.

"33. From New Amsterdam, wore by the common people; no

rain will penetrate it." Brigham: "Tongatabu. A coarse, loosely beaten kapa varnished with red on one side. It closely resembles Samoan siapo." If for red we put reddish brown, this description might very well refer to XXXIX.

XXXIII is brown, of a stiff, papery consistency, and is very carefully ruled, on the side pasted down, with groups of three straight lines in darker reddish brown. These show somewhat faintly on that side, and still more so on the other, being there hardly visible until the cloth is held up to the light. It is probably Hawaiian.

"34. From Otaheite, wore as garments by the ladies.—A number of natives being on board of the *Resolution*, one of the chiefs took a particular liking to an old blunt iron, which lay upon one of the officer's chests, and taking hold of a boy about nine years of age, offered him in exchange, pointing to the iron. The gentleman, although he knew he could not keep the youth, yet willing to see if he would willingly stay, or if any of the rest would claim him, took the child and gave the savage the iron; upon which a woman, who appeared rather young for the mother, sprung from the other side of the ship, and with the highest emotions of grief seemed to bewail the loss of the infant: but the lieutenant, with a true British spirit, took him by the hand and presented him to her, upon which, after putting her hands twice upon her head, she unbound the roll of cloth which was round her body, and from which this specimen was cut, and having spread it before him, seized the boy, and jumping into the sea both swam ashore, nor could he ever learn whether she was the mother, sister or relation, and this he lamented the more, as such affection was very seldom seen among those people." Brigham: "Tahiti. A thick coarse, ribbed cloth painted in triangular patterns of orange, red, brown, with black dividing lines. So far as the diminutive specimen shows the design, it was gaudy rather than artistic." With certain qualifications, this description of Dr. Brigham's seems applicable to XXXVII, as will be seen.

XXXIV resembles IV and VII, except that the red stripe is solid. The first two, and possibly this also, may have been cut from the same piece of tapa.

"35. From the Friendly Islands, and presented to Mr. King, the colours the same as before described." Nos. 1 and 33 are stated to be from Tongatabu, which is one of the Friendly Islands (Tongan group), but in neither of these cases is there any mention of colour. Mr. King was Cook's lieutenant, who wrote the third volume of

Voyage III containing an account of the tragedy in the Hawaiian Islands which closed the great explorer's career. Brigham: "Tongan. A well made hoopai kapa apparently white or cream colour although the catalogue refers to it as coloured."

XXXV is a thin, papery tapa painted with alternate stripes of brown and yellow. The beater was a coarse hoopai or a pepehi. It may be either Tahitian or Hawaiian (Plate II, 4).

"36. From Otaheite; wore by the priests.—The piece of cloth from which this specimen was cut was presented the aforesaid lieutenant, by one of the priests of Owyhee, who seemed to be a very intelligent person, and most readily apprehended the manner of using most of the instruments he saw on board, and could handle them with a surprising familiarity after once seeing. He seldom came on board without some present, and appeared to have a true sense of honour. And the above gentleman thinks that he would have been a far superior object to have brought to England than Omai." Dr. Brigham adds nothing to this but the comment, "a good hoopai kapa."

XXXVI is a thick tapa of three layers. On a white ground are painted sparse red spots and pairs of small black strokes so arranged that four red spots or four pairs of black strokes together with, respectively, one pair of black strokes or one red spot form a quincunx. This crude pattern is figured in Brigham, Pl. W, 1. The tapa is Hawaiian (Plate I, 8).

"37. From New Amsterdam; common, but very durable." Brigham: "Tongatabu. A coarse, durable kapa stamped brown with the upete." XII and XXI are examples of such Tongan tapa.

XXXVII is perhaps a sample of the cloth referred to by Dr. Brigham in his comments on 34. The design, so far as it can be seen on the small specimen, consists of a series of identical rhomboids in line, each divided in half diagonally. One of the triangles thus formed is coloured orange yellow, the other black and brick red, these latter two bits of colour being separated by a white line which was perhaps ideally intended to be a perpendicular dropped from the apex of the particoloured triangle, but, if so, falls short of the aim in the two such figures which are completely shown. The beater, which has left a remarkably well-defined impression, was a konane, to use a Hawaiian term for the implement used in making what Dr. Brigham considers a Tahitian product (Plate II, 3).

"38. From Otaheite; wore by the young dancers of both sexes." Brigham: "Thin, white, papery cloth. Tahitian." This may

refer to X, XXXI, XXXII, XL, or XLII. According to Ellis [Polynesian Researches, i, 216] a part of the costume worn by dancers of the *hura*, who were chiefs' daughters, consisted of "fine white stiffened cloth, frequently edged with a scarlet border, gathered like a large frill, passed under the arms," and reaching "below the waist."

XXXVIII. See under 15; and Brigham, p. 21 and Fig. 7 (Plate I, 5).

"39. A fine specimen of the lace bark, from Jamaica, bought at the Duchess of Portland's sale. N. B. Of Alexander Shaw"—for whom the CATALOGUE was "properly arranged and printed"—"No. 379, Strand, London, may be had some fine specimens of the tree, with the bark." This *Nota Bene* is printed as a colophon, together with the *FINIS* which is the last printed word in the book; all the text precedes the specimens, which, however "properly arranged" in the first place, are now, as we have seen, in disagreement with this list.

It is possible that III may be, in fact, not a portion of a Hawaiian *kapa moe*, but several distinct pieces of Jamaica lace bark.

XXXIX has been referred to under 33, and XL, together with XLII, under 38.

XLI is of a dark dirty brown, evidently the natural colour of the bast, or perhaps of the whole bark, of which it appears in fact to have been made. The reverse has an exceedingly clear cut impress of a *halua maka upena beater*, or what would have been so called if the *tapa* were Hawaiian. It is probably Tahitian. Cook (I, ii, 210) has the following description of one of the varieties of the bark cloth of Tahiti.

"A third [kind of bark cloth is made] of the tree that resembles the fig [*Ficus prolixa*], which is coarse and harsh and of the colour of the darkest brown paper: it . . . resists water . . . the greater part is perfumed, and worn by the chiefs as a morning dress." The passage was taken by Hawkesworth, the editor of *Voyage I*, almost verbatim from Banks's *Journal* [Ed. Hooker, pp. 145-146].

XLIII is a Hawaiian *tapa* made in two layers, which have become separated; it shows traces of waterproofing. A crude design consisting of stripes of a darker brown than that of the ground forms the only decoration. At the upper edge of the specimen the stripes change their direction from vertical to oblique, producing a result resembling the "bent knee pattern" of Fig. 125, p. 207, of *Ka Hana Kapa*.

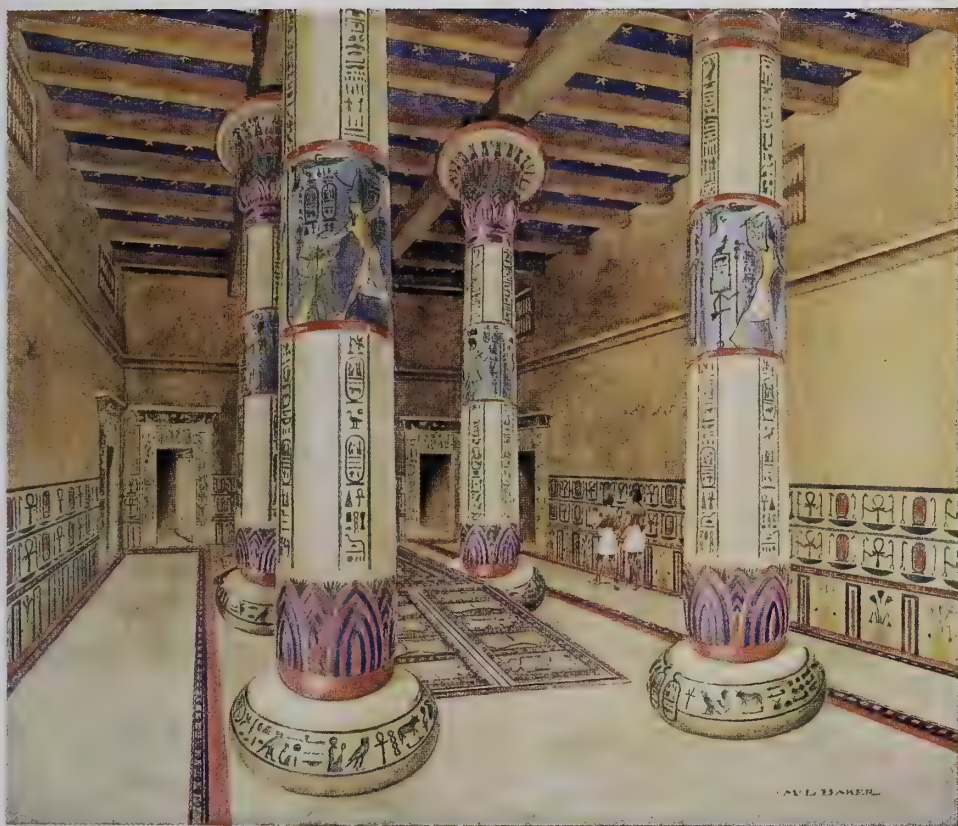
H. U. H.

THE THRONE ROOM OF MERENPTAH

IN the JOURNAL for December, 1917, a summary was given of the excavations in the palace of Merenptah at Memphis, being conducted by the Eckley B. Coxe Jr. Expedition of the Museum. A brief description was also given of the probable appearance of the building before its destruction.

It has now been possible to make a fairly accurate restoration of the principal hall, the great throne room. Restorations of ruined buildings usually have the defect of being largely conjectural and necessarily so, because of the lack of data from which to estimate the vertical dimensions. In the case of the only two other royal palaces thus far excavated in Egypt, that of Akhnaton at El Amarna and Amenophis III near Thebes, the plans are very nearly complete but the walls so denuded that little can be said as to their original height. This condition was due to their having been built on an area which was never used after the buildings themselves were abandoned as royal residences, and the walls were subjected to a long period of disintegration. Fortunately the conditions which obtained at Memphis were different. After the end of the reign of Merenptah, there are evidences that the palace was for a time used for other purposes, but this period of occupation lasted for only a few years and ended with a great fire which swept the entire building. No changes were made in the original plan and no reconstructions undertaken. At the time of the fire the palace still stood with its walls and columns intact. The conflagration, however, brought down the columns and the roof, burying the fragments in a bed of charcoal, ashes and mud bricks which was never disturbed.

For our restoration of the throne room we have first a complete plan of the room. The walls remained to a height of from four to five feet, with some of the painted stucco still in situ. All the door sills with portions of the limestone door framings were in position, and in two instances the entire height of the door was intact. The upper parts of the jambs and fragments of the different lintels lay where they had fallen, often badly scarred and split by the heat of the fire. In the débris over the floor were scattered fragments of the columns and while we did not find any one column complete, we were able from the fragments to estimate to within



*The Throne Room in the
 Palace of Merenptah at Memphis.
 Excavated by the Eckley B. Coxe Jr. Expedition.
 Drawn and Restored by M. Louise Baker
 from measurements, plans and elevations
 by Clarence S. Fisher.*

a few inches the height and the scheme of decoration. The entire dais was intact, having suffered only from a loss of most of its brilliant colour and from the wearing down of the ramp where it had been subjected to most use. The floor and the roof were the only portions for which we did not have actual data. The floor was a layer of bricks laid over a foundation of sand. This floor, as we know from a fragment preserved in an adjoining chamber, must have been covered with stucco on which designs were painted. The roof did not present any great difficulties. Had the main walls of the palace been of stone, we would know at once that the roof consisted of slabs laid on long lintels extending from column to column. But as the walls here were of brick, we must accept a wooden roof as the only possible method which could have been used, and the ways of laying a wooden roof are not many. These were the facts we had. Let us pass now to a description of the room based on these facts.

This throne room was the central hall of a building situated at the southern end of a colonnaded court from which it was reached through a great vestibule decorated on the same elaborate scale as the throne room itself. The main door from the vestibule was double, each of the wings turning in bronze sockets let into stone blocks below the main sill. At the top were other bronze fastenings which had fallen with the burning doors to the floor where they were found. These bore the two cartouches with the name of Merenptah. This door was used only on state occasions. At other times entrance was through small anterooms on either side. The view of the throne room which we give here would be that obtained by a visitor standing just inside the door from the eastern anteroom. At the left is the eastern aisle, with a door at the far end leading into a suite of rooms for the king. From behind the farther column projects one of the small flights of steps by which the king mounted the dais, which appears in the central aisle. The doors on the sides lead into storerooms where the official archives were kept. The hall was sixty feet long and forty feet wide. The ceiling was supported on six columns of white limestone twenty-six feet high. The bases were single blocks of stone sunk below the floor more than a foot and resting on circular foundation walls of rough stones. The shafts contained three pieces while the capital was another single block. At the bottom each shaft was decorated with eight petals in slight relief, the divisions of each petal being alternately blue

and gold. They sprang from a broad band of gold. Between the tips of the petals were lotus flowers inlaid with blue glazed faience. Halfway up the shafts were circled with wide panels on which in relief were scenes of Merenptah slaying his enemies, or making offerings to Ptah, who, besides being his titular deity, was the great god of Memphis. The details of these were picked out in gold and the inscriptions connected with them were partly inlaid with faience. Around the tops of the columns were the usual five bands, coloured alternately blue and gold. The capitals were of the papyrus type. Starting from a corolla of blue and gold sepals was developed a symmetrical design of cartouches of the king, between long stalks of lotuses, ending at a band of gold around the overhanging edge of the capital. The gold was of heavy leaf laid over red paint.

Between the horizontal motives on the shafts were vertical inscriptions, repeating over and over such formulæ as "King of Upper and Lower Egypt, Ba-n-ra-mery-amen, son of the sun, Hotep-her-maat, Merenptah, endowed with life forever." The wording varied, some giving as alternative titles, "Lord of the two lands," and "Lord of diadems." The upper portions of these inscriptions contained always the Horus name of the king, of which we have a great variety. They read: "Mighty bull, beloved of Ptah," "Mighty bull, rejoicing in truth," or "Mighty bull, slayer of the nine bow people." Around each base was a horizontal band of inscription of similar wording. All these hieroglyphs were carefully cut out in the limestone and then inlaid with blue faience, the more intricate signs containing a number of pieces. In some cases it was quite evident that pieces of faience had been molded specially for the purpose, such as the war helmets of the king, and wigs and beards of the king or of Ptah.

The walls were first plastered with a thin layer of mud and straw mortar, deep crisscross gashes being made in the face of the brickwork to make this adhere more firmly. The wall was then coated with fine white stucco on which was painted the colour decoration. At the bottom of the walls was a dado representing red and blue niches with panels between. In the panels alternated bunches of papyrus and lotus, symbols of the two political divisions of Egypt. These were in colour generally on a field of yellow. Above this dado were two rows of cartouches arranged in a pleasing pattern of *ankh* (life) signs with tiny hands holding *uas* (pleasure) sceptres.

Above this the walls were destroyed but we have some evidence that there were various large scenes probably like those on the columns, painted on a background of yellow. High up near the ceiling were square windows, as the lower height of the small rooms along the two sides permitted this clerestory arrangement. Each window was filled with a single slab of limestone, pierced with narrow vertical grooves. The divisions were decorated with alternate cartouches and *kekher* emblems. Each of the six smaller doors in the chamber were framed with limestone. The vertical jambs had inlaid inscriptions like those on the columns. The lintels always contained two Horus names as well as the two familiar cartouches of the king. These were also inlaid. On the cornices were sun discs of gold with outstretched wings, each feather of one or more pieces of faience and outlined with gold. Some of the jambs had sockets for metal door fastenings.

The dais was at the far end of the hall opposite the main entrance. It extended out level from the inner wall as far as the last pair of columns, and then sloped down to the floor as a ramp. The top of the dais and ramp was covered with reliefs which had originally been highly coloured and perhaps partly gilded. There were in the centre a row of panels, in which bound captives of the various races of people over whom Merenptah had won victories alternated with war bows. The whole was surrounded by a wide border of *rekkeet* birds and *neb* signs, emblematic of all nations, and bands of red and blue discs. The background of the design was yellow while blue and red were used for details with possibly, as I have said, gold as well. On the ramp the same scheme was carried out, except that the panels were in two series at the sides with a long inscription down the centre, unfortunately almost entirely worn off by the feet of those who had mounted it.

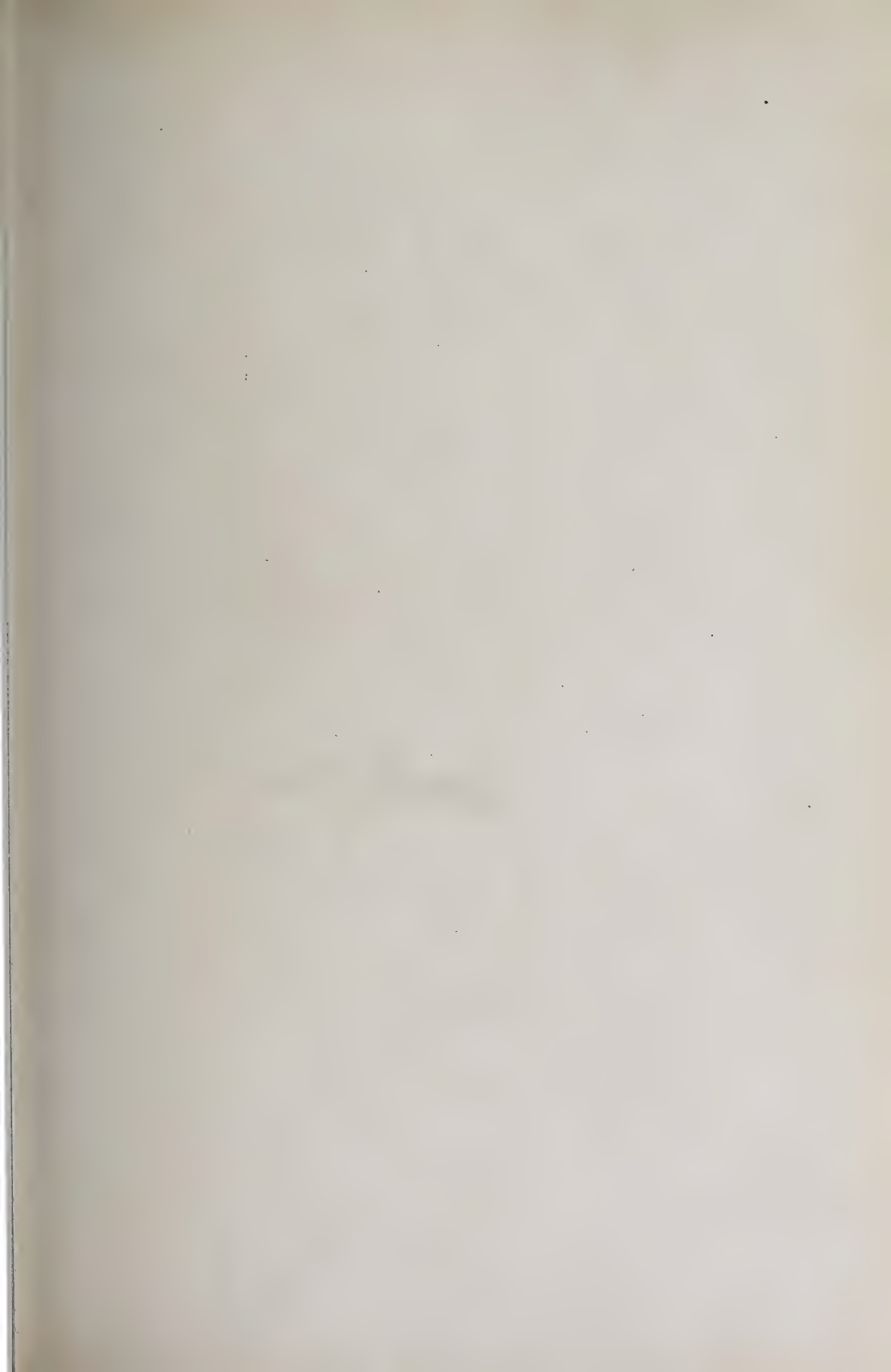
The floor was apparently covered with white stucco and covered with some design in colour surrounded with borders of discs as on the dais. The ceiling had beams extending the length of the room on which were laid the smaller rafters. The panels were stuccoed blue and dotted with yellow or gold stars, representing the sky.

As I have stated in the former article, this throne room if seen in a brilliant sunlight would have seemed far too garish. However, even when the main door was open, the hall would never have appeared so light as in the restoration. The architect evidently had intended to produce a mysterious gloom which would at once have

impressed the stranger with reverence and awe at the grandeur and richness only partly revealed to him.

An audience hour in this hall must have been a spectacle which inspires our imagination. The room filled with slowly moving nobles in their soft white linen robes, panther skins flung over their backs and heavy gold chains and bands on their necks and arms. At the back the figure of the aged Pharaoh Merenptah seated in his richly inlaid chair in all his state robes and crowned with the tall double crown of upper and lower Egypt. Behind him Nubian slaves with ostrich feather fans waving gently to and fro. Perhaps a slight haze of incense over all, and through it slanting the narrow beams of sunlight from the windows high above, here bringing out a patch of gorgeous colour and there glistening on a bit of gold. No other nation could ever have placed their divine ruler in a setting of such splendid dignity and glory.

C. S. F.





Drawn by M. Louise Baker.

BRONZE KNIFE, WITH GOLD ORNAMENT, NATURAL SIZE.
FROM PERU.

THE USE OF METALS IN PREHISTORIC AMERICA

AS long as prehistoric man was held down to the use of bone and stone implements he could make very little progress in civilization and culture, but with the discovery and use of metals his advancement became rapid and continuous. The first period may be measured in tens of thousands of years while the second began only yesterday in comparison.

Certain metals such as gold, silver, copper, tin and meteoric iron occur in nature in a metallic state and would be the first to attract the attention of man. Gold was fairly abundant and widely distributed over the world. It was found in glacial gravels and stream beds in fine particles or in lumps of considerable weight. Man very soon learned that gold was a most worthless metal for all practical purposes. It could be used for ornaments only and consequently had very little part in the development of primitive culture. Later on it became important in the development of the arts. The American Indians could not understand the craze of the Spaniards to obtain their beautiful golden objects only to melt them down.

Copper was found in its metallic state in great abundance about Lake Superior and all along the Andes Mountains. The Indians of these regions had discovered it and had become acquainted with its valuable qualities long before the advent of Europeans. Silver occurs in wirelike forms and in thin sheets. Tin occurs in Bolivia in stream beds as cassiterite and in mines as crystallized prisms. Lead was found in native form but was too soft for common use. Meteoric iron was used by the Indians in many parts of America.

In the beginning the natives quite naturally used copper as they had used stone, shaping it into the same forms and applying the implements to the same purposes. They learned that copper would not break like stone, that it could be beaten into any desired form and, what was more striking and more important, that it became harder when hammered. An implement made in the form of an old stone axe could be hammered thin and then ground into a keen cutting edge. When it became dull from use it could be heated, rehammered and ground into as perfect implement as before.

All this was a great advantage over the old stone implement. A tribe in possession of such implements could easily overcome its neighbors and extend its boundaries and influence. With better tools and implements the industries and arts developed.

It often happens in the development of culture that the people fail to make what would seem to be a perfectly obvious step and the advancement stops short. The Indians about Lake Superior for some reason never learned to cast their copper implements, while the Indians of the Andes made open stone moulds very similar to those used by the ancient inhabitants of Europe. By some means, possibly by some happy accident, men in different parts of the world independently learned to extract metals from their ores, and thus made possible the rapid development of all the industries and arts.

At present there is no method by which we can determine whether in a given case the composition of metal used in the manufacture of an object was the natural one or was made up by the metallurgist at will. Throughout the Andean region from central Ecuador to southern Argentina the natives were in the habit of using bronze, a composition of copper and tin, for the manufacture of many of their implements and ornaments. The proportions of tin and copper vary considerably from place to place and from object to object. On this account it has been supposed the composition was a natural one, but upon examination no native metals of corresponding composition can be found.

The copper of the Lake Titicaca region contains lead; that of southern Bolivia, iron, lead and antimony; that of Urubamba region, silver. So it is possible sometimes to locate the place of origin for the copper. From analysis it would appear that certain metals were particularly desired in certain localities. The Argentinians imported copper from Titicaca, southern Bolivia and Urubamba. The people of the coast near Lima liked silver in their copper and so imported it from Urubamba. There is evidence also of trade in finished products over wide areas. The characteristic bronze axe of Peru has been found in the Amazon forests far to the east of the Andes and in southern Brazil. At the time of the first contact, the Indians of the Paraguay River were making long journeys into the Inca country for the purpose of trading. The Portuguese as early as 1506 had heard rumors of a land to the west rich in silver and gold. It is stated that a ship captain took home with him an Inca silver axe for the King of Portugal.

While there is abundant evidence of trade in manufactured products there is evidence also of trade in raw materials. Bronze objects are found in southern Ecuador where there is no tin, but these objects are made in the form of old Ecuadorian objects, proving that they were manufactured in situ and that the tin was introduced by trade. In Argentina bronze objects are found in a region where there is no native tin. The objects are of local pattern and furnaces, moulds for casting and slag containing tin have been found, thus proving that the tin had been brought in by trade and the objects manufactured on the ground.

Pure tin was found by Bingham in bulk at Machu Picchu. Garcilasso and Bara tell us that tin mines at Corocolla, Bolivia, were worked before the coming of the Spaniards and that the Indians knew the secrets of mixing copper and tin to harden their implements. They did not know the use of the bellows for melting down metals but used instead tapering tubes of copper for concentrating the breath upon the flames. Many of these pipes were often used at one time when greater heat was desired. They also built furnaces on the mountain tops where the strong wind furnished the needed blast. From all this evidence it would appear that the Indians knew the desirable qualities of tin and introduced it as required for their purposes. The ancient metallurgist soon learned that bronze made a better implement than did copper. It was harder, it could be hammered into thin sheets, it could be cast in closed moulds and it took a better impression from the mould.

When all the abundance of analyses is considered it must be accepted as true that the proportion of tin in a given bronze object could not have been selected because of the use for which the object was intended. Some authorities believe that the presence of tin is accidental, "since it is found in greatest quantities in those implements which require it least." If we accept the quotation as the statement of fact, we must conclude that there was probably some very good reason for such proportions of tin rather than that the whole thing was accidental.

It has been shown in laboratory experiments that a composition of about ten per cent of tin receives the best impression in casting. Bronze of this composition expands in solidifying and registers the finer details of the mould. When objects high in tin are examined it is found that they are nearly always ornaments, delicate small objects or the very finest castings. Hence the ancient worker must

have experimented until he discovered the proper proportion of tin for the best impressions. Again, those tools, such as knives and axes, which would seem to require the most tin for use on account of desired hardness, usually have the smallest amount of tin, or from three to five per cent. This is found to be true in such tools coming from Ecuador, Peru, Bolivia and Argentina. We must find some explanation for this uniform practice. It cannot be due to accident in the selection of native material or chance in making up the composition. The reason may be found in the methods of treating these cutting implements. They were first cast then modified by forging and annealing as each individual case required. The final stiffness and hardness was produced by cold hammering. It has been demonstrated by laboratory methods that bronzes containing a high per cent of tin lose their ductility and cannot be cold hammered. For free working of cast metals the tin content should not be above seven or eight per cent at the very highest. It is thus revealed that the ancient smith was compelled to sacrifice the desired hardness of his implements by increasing the tin content to the necessity of free working the bronze. He learned by repeated trial the limits within which he could combine the two elements. There was no accident nor chance, nothing more than an intelligent metallurgist who used his materials to the best advantage for the desired purpose for which the objects were intended.

As there was a copper culture in Colombia and northern Ecuador where tin does not occur, and copper objects are found, although rarely, in the whole bronze area, it may be inferred that there had been an earlier copper culture extending over the whole area. The scarcity of copper objects in the bronze area may be due to melting down the old copper objects in the manufacture of the bronzes. The ruins of Tiahuanaco belong to an old culture. The great stone blocks are held in place by clamps of pure copper but this does not necessarily prove that Tiahuanaco belongs to the copper age. The workmen of the time probably knew that pure copper was better adapted than bronze for the purpose of holding blocks of stone together.

It is to be regretted that the age of prehistoric bronzes cannot be determined with accuracy. There is always an abundance of patination or oxidation present but no law has yet been determined for the rate of oxidation. This depends upon the purity of the metal and the processes to which it has been submitted. Cast

objects oxidize more rapidly than worked specimens on account of their more porous condition. Recrystallization if present may be due to reworking the metal rather than to age. At present there is no guide.

Much has been written on the old story of the lost art of tempering copper and bronze. Like so many such stories the facts of tempering are lost sight of in the story of the art. All competent metallurgists today agree that the art as practiced by prehistoric man has not been lost. The ancients of Europe and America in tempering their metals used the same simple method of cold hammering and nothing more. The fine cutting edge was obtained by grinding.

A REMARKABLE BRONZE KNIFE

Among the numerous objects of special interest in the Paris collection of gold which the Museum has recently obtained, is a knife of unusual form and manufacture. It is cast in solid bronze with a snake of the same material crawling along the back of the blade towards the handle. On the end of the handle stands a bird cast in solid high grade gold. The blade is very thin at the point and along the cutting edge. The total length of the knife, handle and bird is $5\frac{1}{2}$ inches; the length of the knife and handle is $4\frac{1}{2}$ inches; the length of the cutting edge is $3\frac{1}{2}$ inches and the width of the blade is $1\frac{1}{4}$ inches (Plate IV).

The ancient Peruvians were in the habit of using animal and bird forms in all their art products. They wove them into the patterns of their fine cloth, moulded them in clay and metal and painted them upon their pottery. These ancients were expert artisans as well as accomplished artists. Even their common implements were often decorated with artistic designs. The knife here represented has a serpent two inches long and a quarter of an inch thick so coiled along the back of the blade that it does not interfere with the use of the knife. The serpent may be the individual fetish or totem of the man who made it. It is difficult to identify the serpent, but from the rather heavy body, the short tail and the diamond markings on its back it would appear to be a rattlesnake. It was evidently cast separately and later welded on the blade.

The gold bird was cast separately and then set into a socket in the end of the handle. The bird is one inch high and three-eighths

of an inch thick. It is difficult to be sure about the identification of the bird. The prominent distinguishing marks are, the divided tail, the deep wing marks and the large crooked bill. The one bird that possesses these characteristics to a marked degree is the flamingo whose home is around lake Titicaca in the central Andes. It has a short tail but its long wing feathers when folded give it the appearance of having a forked tail; its wing coverts are scarlet but its wing quills are black giving the bird the appearance of having a deep depression across its back and its heavy bill is decidedly bent down. The neck and legs are too short and heavy for accuracy but they have been made so for the greater security. While the flamingo nests and lives for the most part about the lakes in the mountains at an elevation of twelve or fourteen thousand feet it makes frequent visits to the seacoast where it may be seen wading in the surf along the shore.

The knife in most common use by the ancients was in form much like that used today by our harness makers. Nearly the same form was used in prehistoric times in Alaska, Mexico, Peru and Argentina. It was this kind of a knife the Peruvians used in decapitating their enemies and in all personal combats as is shown by illustrations on their pottery. The cutting edge was held on the ulnar side of the hand. The same knife was used as an ornament on the top of their headdresses.

The knife illustrated differs entirely from those found in the ancient graves along the coast or those painted on the pottery of the region. We have no information as to where or when the knife was discovered or how it reached Paris and should be at a loss to determine its provenience but for the finding of a very similar one by Dr. H. Bingham at Machu Picchu in the mountains of central Peru. An analysis of the composition of this knife was published by C. H. Mathewson in the *American Journal of Science*, December, 1915. The knife is described as the "finest example of casting practice furnished by the entire collection." The analysis revealed 88.08 per cent of copper and 9.39 per cent of tin. From the general appearance and description of this knife it may be inferred that an analysis of the one in our collection would give about the same results. It seems unwise therefore to mutilate this perfect specimen for chemical analysis or metallographic examination. Such treatment would not give us all the information desired, not even the clue to the smelting methods used in preparing the metals. It would not tell us whether



Gold Bells from Colombia. The one on the left is in the form of an animal standing in the loop of a rope having the rattle in his abdomen. Gift of Mr. Clarence S. Bement, The bell on the right has a mythical figure seated on the top. Gift of Robert G. Le Conte.

FIG. 1

the ores were mixed in this proportion by nature or by the metallurgist who had combined the pure metals in the proportions most desirable for his purpose. It would give us some information concerning the annealing processes but this is hardly sufficient to justify the partial destruction of such a valuable object.

The use of the knife can be conjectured only. The handle is too short for use in the hand as an ordinary knife. The blade must have been held between the thumb and fingers. It could not have been used for ordinary purposes. It was more than likely a razor but we shall never know unless a picture of one in use is found.

TWO GOLD BELLS

In Fig. 1 are shown two bells natural size cast in fine gold by the process of using wax in making the moulds. The object on the left is in the form of a bat standing in a loop of twisted gold wire. The body is a bell three-quarters of an inch deep containing a tongue of gold. The bell shows much wear on the outside and especially on the inside where the tongue has come into contact with the

lips of the bell. We call the object a bat because of the characteristic canine teeth, the absence of the incisors and the very prominent breasts. The bell probably came from Chiriqui and was presented to the Museum in 1891 by the late Clarence S. Bement. It was formerly the property of the late Dr. Leidy.

The second is the most perfect bell in our whole collection. It is unique in form, having a flat top upon one side of which sits a small animal, probably a bat, holding in his hands a loop of twisted gold wire which ends in two loops on top of his head. He carries in his mouth a small two-headed snake. The bell is supposed to have come from Peru a long time ago and was presented to the Museum by Dr. Robert G. Le Conte.

W. C. F.

A GOLDEN HOARD FROM ECUADOR

THE fine collection of prehistoric American Indian gold objects from Ecuador in the University Museum was found in 1912 by Sr. Pablo Isaias Sanches in the edge of an artificial mound on the island of Tola at the mouth of the Santiago River in the province of Esmeraldas.

The island is low lying and swampy, and at high tide the sea covers a large section of it. The southern part is called La Lolita because it contains numerous artificial earthworks, some of them reaching the size of 25 feet in height and 150 feet in diameter. Sr. Sanches has developed this mound area as a cattle ranch and has given it the name of Pampa de Oro on account of the abundance of gold obtained by placer mining. Very little archaeological work has yet been done although some forty mounds have been cleared of the forest. Sr. Sanches dug a trench into one large mound and at a depth of 23 feet found a human skeleton buried in a sitting posture surrounded by pottery vessels. Among the numerous smaller objects in connection with the body was a most interesting golden egg having inside an uncut emerald.

While excavating at the side of a mound for the foundations of an extension of his brewery Sr. Sanches came upon a large clay box (Fig. 2) which proved to be a burial urn containing the skeleton of a child along with all the larger pieces of gold here illustrated.

Some description of the objects illustrated seems desirable. The large breastplate 14 inches across has a humanlike head embossed in the centre. The head, which was made separately by hammering, stands out $1\frac{1}{4}$ inches from the background to which it was attached by a splendid job of soldering. One of the rays had been broken off midway and repaired with a piece of gold differing in color by soldering on the joined pieces several short strips of soft gold and then beating them down. The head is probably that of the bat god, as the large canine teeth and holes instead of incisors are characteristics of that being. Four double headed alligators are repoussé on the background. They are made to appear very realistic with upturned snouts and triangles and dots to represent scales.

The second breastplate is $13\frac{1}{2}$ inches long and has two human



Pottery Chest in which the Gold Hoard from Ecuador was found. It was dug out of a mound on the Island of Tola, Province of Esmeraldas.
Size in inches, H 18. L. 23. W. 20.

FIG. 2.



Gold Breastplate 14 in. across. In the centre is a humanlike head surrounded with doubleheaded alligators in repoussé.

FIG. 3.



Gold Breastplate 13½ in. across. Head of the bat god in the centre with two human figures on each side.
FIG. 4.



Bat god of gold with wings $9\frac{1}{2}$ in. across.

FIG. 5.

heads at each end in repoussé. The head in the centre again appears to be that of the bat god. It was cast separately and soldered to the beaten plate. The nose pin has the appearance of passing through the septum but in reality two separate pieces were soldered on instead. (Fig. 4).

The bat god in Fig. 5 measures $9\frac{1}{2}$ inches across his wings. His head was cast in a slightly different coloured gold and soldered to the beaten body. His breasts are those characteristic of the bat while his hands are human.

Another example of the alligator design will be found in the beautifully decorated object in Fig. 6 which contains conventionalized heads of six alligators, two facing each other in the middle and one in each corner.

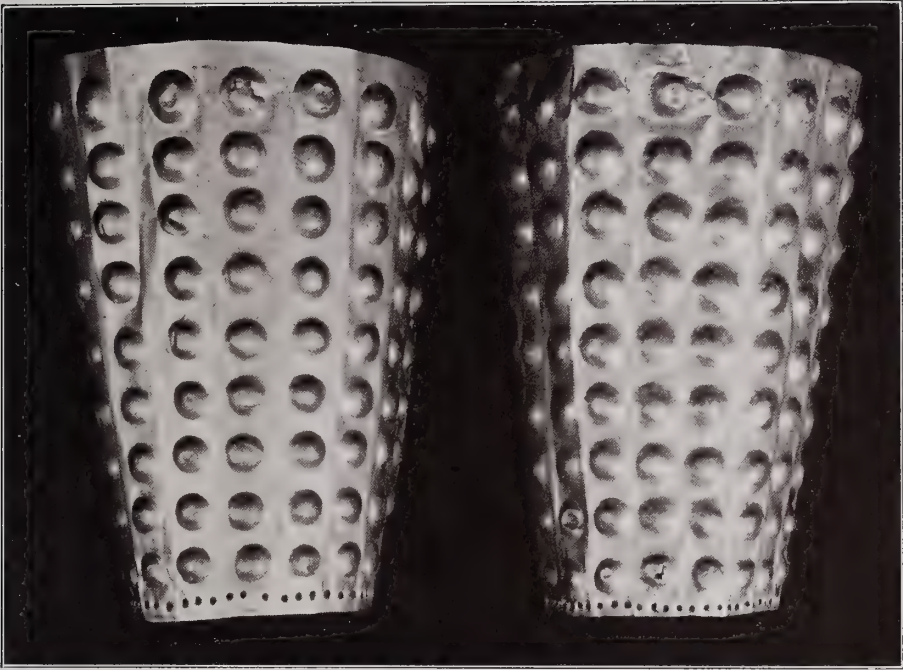
The two cufflike objects are identical, each 8 inches long and having ten rows of small bosses nine to the row. It is very doubtful if these were ever worn on the arms or legs because they are perforated at the four corners with large holes and around the smaller end with numerous small ones. The holes were made from the outside and hence the inside is very rough. The cuffs were more than likely attached by means of round headed gold nails to some wooden object, possibly an idol.

There are nearly a thousand thin quadrangular pieces of gold, five-eighths inch by one inch, perforated at the corners and evidently



Various gold ornaments from Ecuador.
The design of the central figure is made up of six alligator heads.
One half size.

FIG. 6.



Cufflike objects of gold 8 in. long.

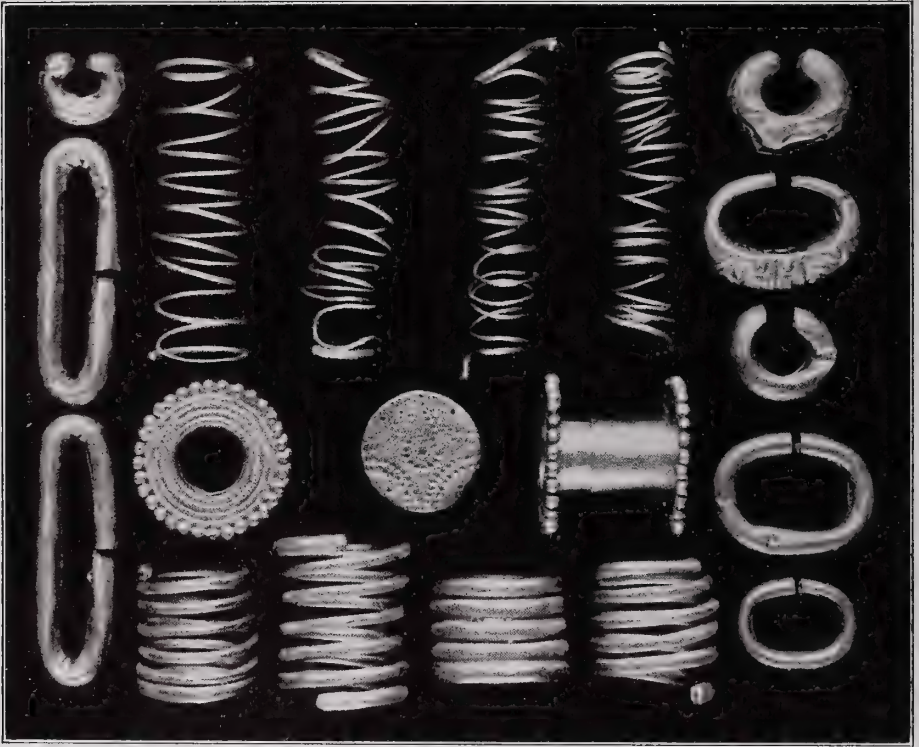
FIG. 7.

intended for sewing on garments. From the position in which they were found, connected with the skeleton of the child, Sr. Sanches thought they had been sewn on the burial shroud of the child. The decorated ones served as a fringe.

The beltlike sheets of gold having large bangles attached to them with gold wire are a mystery. The largest of the three pieces is 20 inches long and has fourteen bangles attached to it. One guess is as good as another as to their use. They contain perforations for sewing or nailing them fast.

Besides these larger pieces there are numerous interesting smaller bits of jewelry. Such as two wheelshaped telescopic earrings in filigree work; two elaborately made earrings with hooks for suspension; nose ornaments made from a beaten nugget, some are hollow while others have a copper core plated with gold; small round decorated boxes with soldered ends; coils of gold wire of different sizes and other nondescript objects of unknown use.

In the lowlands of the island wherever excavations are made gold is found in paying quantities and along with it great quantities



The nose ring in the left hand upper corner is a beaten nugget; the one on the right is copper plated with gold; all the others are of gold and hollow. One half size.

FIG. 8.

of pottery fragments are obtained in the mud and decayed vegetable material to a depth of five or six feet. While panning for gold the natives find, besides the natural gold sands, thousands of very minute finely worked objects or fragments of jewelry in an immense variety of forms and designs. Fig. 9 will give some idea of the two or three thousand specimens in our collection. Among them are nose, ear, lip and cheek ornaments; awls, needles and fishhooks; tacks and nails, with heads and without, of various forms and sizes; gold rings and pendants with stone settings; minute bangles attached to other jewelry; miniature masks of plain beaten gold and of delicate filigree work. The use of many of these things is obvious and that of others may be inferred from the stories of the conquerors who reported that the Indians' faces were sown with nails of gold.

There is evidence that the ancient Indian workmen of Esmeraldas were metallurgists of marked ability. They were the only



A few of the smaller gold objects. Natural size.

FIG. 9.

people who manufactured platinum jewelry. In our collection will be seen objects of pure platinum, objects with platinum background set with tiny balls of gold fused to form a border, and objects with one side platinum and the other gold.

The characteristic feature of these objects is their microscopic size. Large objects are found in the mounds as is shown by our plates but nothing of any size has been found in the washings.

The origin of this gold is at present a great conundrum. It has the appearance of a junkshop where fragments have been collected for reworking. Yet a very large per cent are perfect specimens. Material of similar character is found in several places along the shore where rivers enter the sea. All these rivers carry down native gold, and the Indians washing for it find the worked specimens in their pans. These deposits do not have the appearance of refuse

heaps or village sites but more that of redeposited material under the action of water. However, if it was so redeposited, what has become of the larger pieces of gold? Sometimes entire pots are found and human bones which show no signs of rough usage. The whole problem will require careful scientific work for a satisfactory solution.

Interest attaches to these Ecuadorean collections because of their artistic value, their suggestive designs, and their evidence of mechanical skill and metallurgical knowledge attained by the ancient smiths. No other people worked platinum and none made so much delicate jewelry. Many of the designs are so similar to those found in Central America and so unlike any in Peru or Colombia that one is inclined to believe there has been a direct contact between these two widely separated cultures. The bat god in gold is common in both areas.

The alligator designs in repoussé on the gold breastplates are strikingly similar to those found painted on the so called "alligator ware" from Chiriqui. Very realistic alligators in repoussé are found on the large gold breastplates from Colombia, whereas in Esmeraldas and Chiriqui the animal is highly conventionalized. The common designs on the pottery of the two regions are also quite similar. Another very important bit of evidence has come to light touching upon a curious custom formerly practiced in the two areas. I refer to the custom of decorating the incisor teeth by inlays of jadeite, turquoise, gold, etc., found in Mexico, Central America and Ecuador but not found elsewhere. Until more archæological work has been done in Colombia and Panama it will be impossible to determine whether the contact between Esmeraldas and Chiriqui came by way of the land or across the sea. Here is an important field for careful research.

W. C. F.

THE ULUA MARBLE VASES

IN the Central American collections in the Museum is a group of marble vases from the Ulua Valley in Honduras that are so unusual and of a type so distinct as to cause a good deal of curiosity among scholars and among people generally who are interested in the native arts and native customs of America. Our knowledge of the native customs of Central America and Mexico is so meagre that every item of information, added to the general fund, is sure to be received with satisfaction. For the same reason it is natural that each new discovery should become a subject of speculation and conjecture in the efforts of serious students to supply the knowledge that is lacking.

Attempts have been made to establish a relationship between these Honduras marble vases and the arts of ancient Mexico and to identify them with ancient Mexican ideas and practices. I purpose to publish in these pages for the first time complete data on this group of marble vases, so far as such data are available, so that their true relationships may be made clear or at least that errors relating thereto may hereafter be avoided.

The vases are four in number and by multiplying photographs of each I hope to present a true pictorial description of the group. In addition to these photographs I will give some drawings to help clarify the details, but all parts of the designs can be studied from the photographs alone. One of the vessels was briefly described by me in an article in the Holmes Anniversary Volume in 1916 with one photograph and seven drawings. That article contains the following passages.

Points of contact between the ancient dwellers in the Ulua valley and other centers of native American civilization left their marks in the form of numerous importations. The collection found during the excavations of 1896-97 includes objects in stone and in pottery that had their origin in parts as far distant as the Valley of Mexico on the one hand and Panama on the other.

A people who were so enterprising as to establish these various lines of communication and develop this far reaching foreign trade would not have been slow to benefit by the contact with foreign ideas

which that trade brought them, and their progress would not have failed to be accelerated in consequence of their traffic.

It is not surprising therefore to find that the purely local products exhibit on the one hand a strong conservatism and on the other a degree of skill in their workmanship and an artistic merit that was not surpassed among any of the ancient civilized peoples of America.

This Ulua culture, like other ancient American cultures, is without date. That it was contemporary with the ancient Maya empire as well as with various cultivated peoples that flourished in Mexico, Costa Rica, and Panama, is proved by the products of these civilizations, unearthed at great depth below the surface in the banks of the Ulua; but until a sure method is found for determining the periods in the history of these better known peoples, such associations will not aid us in establishing the dates of corresponding periods in the Ulua valley.

Among the objects unearthed during the excavations in the banks of the river, none possesses greater interest than a group of vessels made of a fine white marble and carved on the outside with a bold design presenting highly distinctive features.

The vase measures nine and three-quarter inches high and six inches broad at the rim. On opposite sides the most striking feature is presented in the form of a pair of projecting handles, which, carved from the one piece of marble, stand out boldly from the circular contour of the vessel. The design of these handles is quite extraordinary, and its execution is no less remarkable. Each handle represents a pair of animals of different kinds, the larger animal in each case, attached dorsally to the body of the vase, forming the main feature of the handle. The head, projecting horizontally, forms the upper part of the handle. The smaller animal is held in the claws of the larger. The position is so reversed that the head forms the lower termination of the handle. The ventral surfaces of the two animals, being brought into close contact, are not sharply defined in the carving of details. The dorsal part of the smaller animal however is carved in detail, with a serrated line which extends from the head to the end of the tail. The head of this smaller animal is turned sideways so as to face to the left in each case.

The animals represented in these two remarkable groups present distinguishing marks, but it would be idle to attempt to identify the species. There is a presumption in favor of supposing the larger one to be either the jaguar or the puma, because these are the two most

conspicuous animals of Central America. There is some suspicion also that the smaller is the iguana.

The cylindrical surface of the vase is divided into four zones. The uppermost zone consists of a plain rim and a sculptured band. Next comes the principal band occupying the body of the vase and entirely covered with ornament of elaborate and curious composition. Below this is another band of ornament corresponding to the one at the top, followed by a narrow plain band. The fourth zone occupies the base of the vessel, which is an inch and a half high. This surface is again divided into two bands, the upper of which is perforated at intervals, while the lower is worked out into a simple decorative



Design on the obverse of Vase A.

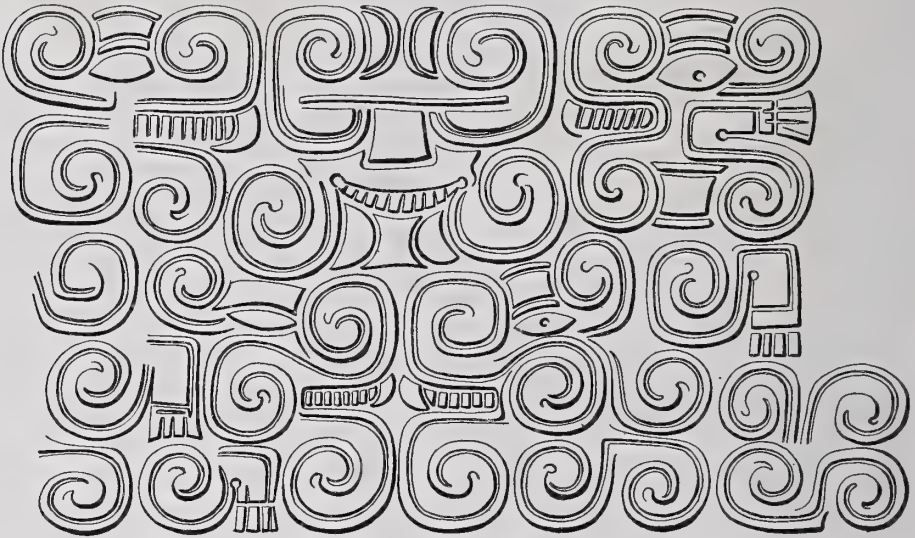
FIG. 10.

border. The broad central zone corresponding to the main field of decoration claims especial attention.

In order to explain the elements or units that enter into the composition of this ornament it is necessary to have recourse to drawings and to divide the contour into two semicylindrical surfaces separated by the handles. Fig. 12, which may be called the principal unit in the design, is repeated with striking alterations on the other side. The next unit of design is shown in Fig. 13; it occurs eight times, yet in no case is it repeated in the same form. The other units of design are those shown in Figs. 14, 15, and 16, each of which again passes through its conjugation on either side of the vessel in making up the composition of the ornament. It is obvious that the units

shown in Figs. 14, 15, and 16 are abstractions borrowed from one of the animal forms. The entire zone of ornament is developed in Fig. 3, 10 and 11.

The distribution of the various units of design is such as to produce a well balanced effect, and a first glance gives the impression that this balance is produced by repeating the units symmetrically in such manner that each unit is balanced by its counterpart placed in contrary motion opposite. To assume this to be the case, however, would be a great mistake, as anyone will find who attempts to copy the design. The variety of expressions with which the few elements



Design on the Reverse of Vase A.

FIG. 11.

are introduced in their assigned positions in order to give balance without repetition, and with the entire absence of mechanical effect, is admirable. A similar refinement of feeling distinguishes the entire vase. While in itself perfectly symmetrical to the eye, its lines are not mechanical, and they are not laid down by any instrument of precision. The ornament in all its parts betrays the same characteristic freedom. Even the bands above and below the main zone, although composed of the same elements, occur in different numerical combinations and in contrary motion.

It would be as useless to speculate concerning the symbolism of all this ornament as it would be to guess at the service for which the vessel was designed. We are at liberty to assume that so elaborate

and refined an object had a ceremonial function and that its symbolism corresponds to ideas associated with its use, but its interpretation is quite beyond our reach.

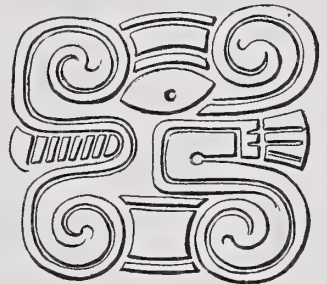
What I am concerned with here, however, is not so much the interpretation of this object with respect to its symbolism as to call attention to its qualities as a work of art. These are of very high order and of such character that they afford striking demonstration of certain relations and bring into view a number of interesting facts. The artist that executed this work was a master of design; it would indeed be difficult to match it anywhere. His art, moreover, is the expression of a liberal culture that must have had a wide application. It had those qualities of conscious power that everywhere marks



Full Face Animal's Head.
FIG. 12.

a definite stage in the progress of human endeavor in the field of art. It corresponds to the period of instinctive feeling. It is a phase of art that belongs to that older inheritance of rugged strength and assurance in which the impulse of the artist's mind is as ingenuous as the work of his hand is spontaneous. It is a phase that always precedes, by a very long way, that period of labored affectation and painful groping that is our more recent inheritance in the field of art. It is so remote from our own artistic experience that we wonder at its appeal.

This ancient vase from Honduras carries with it qualities that are common to all treasures of antiquity wherever they may be found. It adds the weight of its testimony to the abounding evidence that culture in ancient America had made great and diversified advances, and that among many prehistoric peoples of the western continents a very fine artistic sense prevailed. It helps us to form a true estimate of the place which the prehistoric Americans occupied among the civilized peoples of antiquity.



Profile Animal's Head.
FIG. 13.

In the magazine *Art and Archaeology*, Vol. XI, Nos. 1-2 (Washington, 1921), Mrs. Zelia Nuttall offers some comments on this

article of mine which was afterwards reprinted with some verbal omissions and with the omission also of five of the explanatory drawings in the magazine above mentioned. (Vol. IX, No. 3, Washington, 1920.)

In her comments Mrs. Nuttall commits a number of mistakes that had better be corrected. For the most part the photographs will be found sufficient for the purpose. For the rest it will only be necessary to present a few statements of fact concerning the material and design that enter into the composition of these Honduras vases in the University Museum.

Mrs. Nuttall observes that I made no allusion "to the fact which is so vital and interesting" that the principal units of design which I described "are conventionalized serpents' heads."

It is true that I made no such allusion for I was under the impression that these units of design are something quite different. So clear was this impression in my mind that I contented myself with giving accurate drawings of each, together with a photograph of the vase



The Paw
FIG. 14.



The Ear.
FIG. 15.



The Nose and Cheek.
FIG. 16.

and the statement that the units of design are abstractions borrowed from one of the animal forms represented on the handles. My thought was that anyone who would be likely to read my article would need no further help in identifying the units of design on the cylindrical surface with animal forms expressed in the handles.

Mrs. Nuttall proceeds with this statement: "These serpents' heads are clearly discernable in the photographic reproduction of the vase which illustrates Dr. Gordon's article, but curiously enough, are barely recognizable in the carefully executed outline drawings." She then offers as a substitute for some of the drawings that accompanied my article, certain other drawings to which she refers as follows. "To make this clear, the Mexican artist, Sr. José Leon has made drawings from the published photographs in which the forms of the conventionalized serpents' heads and the peculiar technique of the native sculptor . . . are skilfully rendered."

Only one photograph has been published heretofore and this, the one that accompanied my article, was the only one to which Sr.

Leon could have had access. It shows one aspect of a cylindrical surface, which does not afford scope for an accurate drawing of the foreshortened parts. The drawings published by me were made from the original object by Miss M. Louise Baker under my direct supervision and criticism. They are accurate and strictly literal. Moreover, they reproduce faithfully the character of the carving which is vigorous, free and spontaneous. On the other hand the illustrations that Mrs. Nuttall reproduces are inaccurate in drawing and are deficient in the freedom and strength that characterize the original workmanship.

The fact is that there are no serpent heads at all on the Honduras vase. The devices that Mrs. Nuttall calls serpents' heads are different ways of showing the heads of the animals that are represented with more realism in the handles of the vessel. These animals are quadrupeds and the whole design on the body of the vase is made up of parts of these animals as follows: the front face, the profile, the paw, the ear and the jaw.

Having started with a wrong identification Mrs. Nuttall was quite naturally led into an erroneous interpretation, for being subject to this correction, the meaning which she ascribes to the design loses its only support.

In her next argument Mrs. Nuttall makes the statement that no true marble has been found in Mexico or Central America. It is evident that Mrs. Nuttall has been generally misled on the subject of marble, for she claims that the substance found in the State of Oaxaca and locally called *técali* is not marble but onyx and that this local product is the material from which "numerous ancient vases and vessels unearthed in different parts of Mexico and Central America . . . are made . . ."

Therefore, the argument runs, the vase which I call marble is in reality made of onyx, and since that material comes from Oaxaca it follows that the vase itself cannot be a product of Ulua culture, and must have been imported from Mexico.

Here are three fallacies combined to support each other. First, that the material found in Oaxaca and locally called *técali* is onyx; second, that there is no marble in Honduras; and third, that the object of which I wrote is made of onyx.

As these errors of Mrs. Nuttall are based on popular notions and a habitual looseness in the use of language by writers generally, and on a confusion of terms, they had better be set right for the sake

of general accuracy. The substance called técali found in Oaxaca, and used by the ancient Mexicans in the practice of their arts and industries is marble and not onyx. It is popularly called Mexican onyx and also onyx marble on account of its banded appearance that gives it a superficial resemblance to onyx. It is a carbonate of lime with a compact crystalline structure and a true marble. Onyx is a hard silicious mineral quite distinct from marble and unrelated thereto. Geologists tell us that the Mexican marble found at Técali in Oaxaca was deposited in the form of stalagmite and belongs in the same class of marbles as the so called onyx marble of Algeria, the stone that was largely used in the building of ancient Rome.

Mrs. Nuttall tells us that "as yet no true marble has been found in Mexico or Central America." This is a comprehensive mistake. True marble has been known within these regions for a long time. Besides the deposits in Mexico there is a well known deposit of marble in Honduras near Omoa, adjacent to the Ulua River. This deposit was described by E. G. Squier in his book, *The States of Central America*, published in 1858, in the following words.

"The hills and mountains back of Omoa have exhaustless quarries of a fine compact white marble remarkably free from faults and stains and well adapted for statuary and ornamental use." (Page 189.)

The same words are repeated in Squier's book on Honduras published in 1870. (Page 125.) The deposit of marble at Omoa is not of the banded variety found in Oaxaca and is easily distinguished therefrom. The material from which the Ulua marble vases are made is identical with the marble of Omoa.

These considerations would seem to dispose of Mrs. Nuttall's contention that "Until other ancient quarries are found and it is proven that a marble was obtainable in the region of the Ulua River, Honduras, one may be permitted to question Dr. Gordon's view that the vase in question is of marble and a product of Ulua culture."

The following facts are quite clear; namely, that Mrs. Nuttall's identification of the figures on the body of the published vase fails to be supported by an appeal to the figures themselves; that her drawings of these figures are incorrect and indicate an entire want of comprehension; that her interpretation of these figures is without foundation; that her proposals about the material of the vase are made regardless of the facts; that her suggestion as to the origin of

the vessel is inadmissible in view of these facts, and finally, since her description of the use of the vessel is based on a combination of the foregoing errors, it is clear that her ideas on that subject must also be rejected. In short, Mrs. Nuttall's article has confirmed the opinion that I formerly expressed in the following words.

"It would be useless to speculate concerning the symbolism of all this ornament as it would be to guess at the service for which the vessel was designed. We are at liberty to assume that so elaborate and refined an object had a ceremonial function and that its symbolism corresponds to ideas associated with its use, but its interpretation is quite beyond our reach."

Each of the five vases presents the same general features as the one described. That one alone presents two animal figures combined in the handles, but the others show on the handles or handle one or the other of these animals, sometimes one and sometimes the other. In each instance certain features of that animal, full face, profile of head, paw, ear or jaw or a combination of all these features are graphically represented on the cylindrical surface.

Mrs. Nuttall's errors are indeed quite natural for they are based in part on inadequate data, in part on misconceptions that are quite common, and for the rest on methods that find much favour. It is due to her and to all students of Mexican and Central American antiquities that such data as may be preserved in this and other museums should be made available for their studies.

G. B. G.



Vase A. Obverse.
Of Marble. From the Ulua River, Honduras. H. $9\frac{3}{4}$ in.
FIG. 17.



Vase A. Obverse Right.
Of Marble. Ulua River, Honduras. H. $9\frac{3}{4}$ in.
FIG. 18.



Vase A. Obverse Left.
Of Marble. Ulua River, Honduras. H. $9\frac{3}{4}$ in.
FIG. 19.



Vase A. Reverse.
Of Marble. Ulua River, Honduras. H. $9\frac{3}{4}$ in.
FIG. 20.



Vase A. Reverse Right.
Of Marble. Ulua River, Honduras. H. $9\frac{3}{4}$ in.
FIG. 21.



Vase A. Reverse Left.
Of Marble. Uluá River, Honduras. H. $9\frac{3}{4}$ in.
FIG. 22.



Vase B. Obverse.
Of Marble. Ulua River, Honduras. H. $6\frac{5}{8}$ in.
FIG. 23.



Vase B. Obverse Left.
Of Marble. Ulua River, Honduras. H. $6\frac{5}{8}$ in.
FIG. 24.



Vase B. Reverse.
Of Marble. Ulua River, Honduras. H. $6\frac{5}{8}$ in.
FIG. 25.



Vase B. Reverse Left.
Of Marble. Ulua River, Honduras. H. $6\frac{5}{8}$ in.
FIG. 26.



Vase C. Obverse.
Of Marble. Ulua River, Honduras. H. $4\frac{3}{4}$ in.
FIG. 27.



Vase C. Obverse Left.
Of Marble. Ulua River, Honduras. H. $4\frac{3}{4}$ in.
FIG. 28.



Vase C. Reverse Left.
Of Marble. Ulua River, Honduras. H. $4\frac{3}{4}$ in.
FIG. 29.



Vase D. With one Handle.
Of Marble. Ulua River, Honduras. H. $1\frac{3}{4}$ in.
FIG. 30.



Vase D. Side opposite Handle.
Of Marble. Ulua River, Honduras. H. $1\frac{3}{4}$ in.
FIG. 31.

A NEW FRAGMENT OF CHRONOLOGY

THE DYNASTY OF AGADE.

AT a few months interval, our material for reconstructing the early Sumerian chronology has been increased by the recovery of a small fragment. It belongs to the tablet published in the last number of the MUSEUM JOURNAL. It is indeed the lower part of cols. 7 and 8, which gives us back for the first time the complete dynasty of Agade.

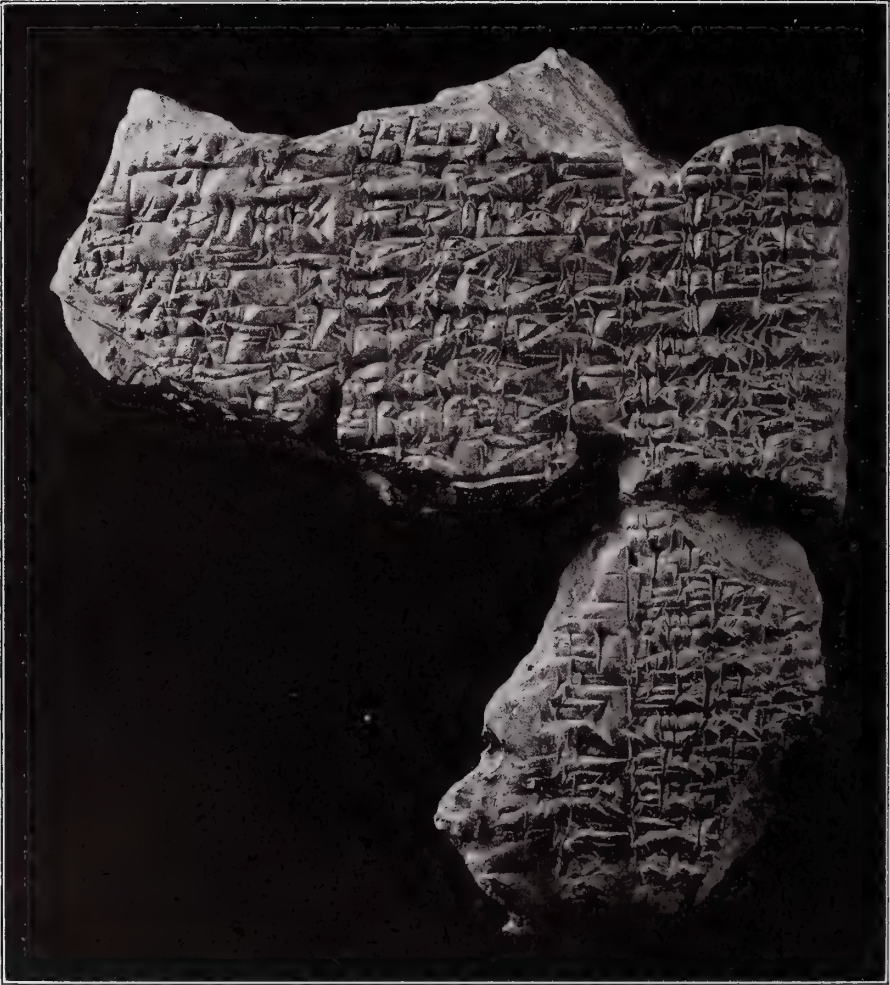
The old Sargon, the founder of Agade is a great figure of the past. His empire extended probably to the Mediterranean Sea. We can now establish the order of his descendants and the lengths of their reigns. It becomes evident that king Naram-Sin commonly called son of Sargon, was his son only in a broad sense, being in reality his great grandson.

The dynasty of Agade reads as follows.

Sargon reigned.....	55 years
Rimuš son of Sargon reigned.....	15 years
Maništešu son of Rimuš reigned.....	7 years
Naram Sin son of Maništešu reigned....	56 years
Šargani-šarri son of Naram-Sin reigned..	25 years

Sargon was king of Kiš before he founded Agade. He calls himself a devotee (ur) of the god Zamama, the patron god of Kiš, perhaps his personal god. In the same manner, before him, king Lugalzaggisi, born in the city of Umma, calls on his patron goddess Nidaba, even when he is the all powerful King of Uruk. The title of libator may be an actual expression of the rank and function of Sargon in the temple of Zamama. It has a strange savour of the old Sargon legend, of the boy brought up by Aggi the libator, the adopted child growing up in the precincts of the temple and rising to the dignity of founder of a great empire. To the last days of Nineveh and Babylon people never tired of reciting that wonderful story.

Soon after Šargani-šarri, a fragment (No. 3) published formerly by Poebel, has a computation of its own, a total of 157 years for the 5 kings, which is correct by one year compared with the detail of the new fragment. But most remarkably it attributes only 24 years to Šargani-šarri, instead of the 25 of the new fragment. On



Two Fragments of a Clay Tablet giving a List of Kings. These two fragments, after having been separated for thousands of years, were brought together and joined by the context of the inscription.

FIG. 32.

the main fact they agree. The only doubtful point, in the poor condition of our damaged fragment is the number of years 6 or 7 of King Maništešu. But the number 7 seems to be required by the total of Poebel's fragment. Moreover we have the means of controlling the correctness of the figures. In the well known tablet published by Scheil we read that 12 kings of Agade reigned 197 years. The last kings of Agade after Šargani-šarri, reigned together 39 years, which added to our 158 years, amounts exactly to 197.

Šargani-šarri according to the famous inscription on the door socket from the temple of Nippur, now preserved in the Museum, was the son not of Naram-Sin but of Dati-Enlil. How this is to be reconciled with the statement on the new fragment, is not clear.

More trouble awaits us with the immediate successors of Šargani-šarri. Scheil's and Poebel's documents make good that 4 kings reigned together 3 years. They agree more or less about their names and order: Igigi, I-mi-ilu(?), Nanium or Na-nu-um, and Ilulu or Elulu. Poebel's fragment insists on the fact that they were kings. The new fragment breaks off before the end of the list, and has variants of its own. It reads:

Ma-nu-um	[šarru]
Ma-nu-um	[la . . .]
Ir-di -[	]
Na-nu-[um	]
I-[	]

Was the scribe uncertain about the reading of the names, or did he feel authorized to translate them? And what are we going to do with the first lines: manum . . ., written in good Semitic language, for which we find a Sumerian translation: a-ba-ám, in Scheil's tablet? Are they a short sentence, expressing that in the confusion which followed Šargani-šarri's death, nobody knew who was the legitimate king, or are they proper names, to the effect that Manum was king, but not counted as king, or did not reign at all? In fact between Šargani-šarri and Dudu and Šugarkib, the last 2 kings of Agade, we want not 4 but 5 names to make good the total of 12 kings. It is too early to give a definite answer to the question, which after all has not great importance.

Rest of col. 8, gives the end of the names of some of the Gutti kings No. 8 to 11.

L. L.

NOTES

GIFTS.

The following gifts have been received.

Mr. Eldridge R. Johnson, two Chinese sculptured horses of the Emperor T'ang Tai Tsung, 7th Century A. D.

Mrs. George S. Robbins and Miss M. R. Coles in the name of Miss Mary Coles, a miscellaneous collection of ancient coins, Egyptian amulets and ethnological specimens.

Mr. John Cadwalader, a Cypriote head of the 6th Century B. C.

Mr. C. T. Loo, Lai Yuan & Co., two Chinese stone statuettes, 7th Century A. D.; one Chinese rug of the Ming Dynasty.

Mr. J. N. Pew, Jr., and Dr. Ward Brinton, a group of antiquities from Merida, Venezuela.

Mrs. Hampton L. Carson, a Northwest Coast carved chief's staff.

Mr. Alfred C. Beals, two Apache baskets.

Dr. Charles D. Hart, a Guanaco robe from the Tehuelche Indians of Patagonia.

PURCHASES.

Thirteen pieces African wood carvings, Central Congo Region.

One Inca gold mask.

Three Central American painted vases.

One Mexican painted vase.

One painted buffalo robe of the Ojibway Indians.

ELECTIONS.

At the January meeting of the Board of Managers, Mr. Eldridge R. Johnson was elected a Vice President.

At the February meeting, Mr. William M. Elkins was elected a member of the Board of Managers.

NEW EXHIBITS.

On the afternoon of January 15th there were opened three new exhibits arranged in the east wing of the first floor. The first room contains an exhibition of Arabic Art; the second, an exhibition of Primitive Art of Africa and the South Seas; and the third room contains an exhibition of American Indian basketry. These three collections will remain on exhibition permanently.

PALESTINE EXPEDITION.

The Museum has received from the new government of Palestine a concession to excavate the ruins of Beisan, the ancient Beth-shan of the Bible. Mr. Clarence S. Fisher, who has conducted the Museum's work in Egypt will leave for Palestine early in May to proceed to Palestine by way of Egypt.

LECTURES.

Arrangements were made between the Museum and Mr. David G. Hogarth, Keeper of the Ashmolean Museum at Oxford, for a series of lectures to be given in America. These lectures were delivered at the University Museum, the Metropolitan Museum of Art, Chicago University, the National Geographic Society and Princeton University. The subjects of Mr. Hogarth's lectures were The Hittites in Asia Minor and Syria, The Ionians, The Arabs in the World War. The Museum was enabled to secure Mr. Hogarth for these three lectures through an appropriation from the George Leib Harrison Foundation.

During Mr. Hogarth's visit to the country several institutions in addition to those mentioned availed themselves of the opportunity and arranged to have the same lectures.

During the first quarter of 1921 the Saturday afternoon lecture course was continued as follows.

- January 8. David M. Robinson, War Memorials Past and Present.
- January 15. George Byron Gordon, Baalbek, the Wonderful.
- January 22. Clement Heaton, The Origins of Mediæval Art.
- January 29. W. B. Dinsmoor, The Restoration of Greek Buildings.
- February 5. Robert Cushman Murphy, The Bird Islands of Peru.
- February 12. Hector Mac Quarrie, The Island of Tahiti and its People.
- February 19. David George Hogarth, The Hittites in Asia Minor and Syria.
- February 29. David George Hogarth, The Ionians.
- March 5. David George Hogarth, The Arabs in the World War.
- March 12. Fred Payne Clatworthy, Pictures of the West.
- March 19. H. U. Hall, The Philippine Islands.
- March 26. Charles K. Edmunds, Thirty Thousand Miles in China.

THE MUSEUM JOURNAL

On Sunday afternoons the following lectures were given.

- December 19. G. B. Gordon, Jerusalem.
January 9. Wm. C. Farabee, The John Wanamaker Expedition
to Northern Alaska.
January 16. Joseph M. Rogers, Rome.
January 23. H. U. Hall, The Philippine Islands and their People.
January 30. G. B. Gordon, From Cairo to Damascus.
February 6. Wm. C. Farabee, Our Debt to the American Indian.
February 13. G. B. Gordon, Baalbek, the Wonderful.
February 20. David George Hogarth, The Hittites in Asia Minor
and Syria.
March 6. David George Hogarth, The Arabs in the World War.
March 13. H. U. Hall, The Igorot of Luzon.
March 20. Wm. C. Farabee, Mexico and the Mexicans.

SCHOOL LECTURES.

During the months of October, November and December more than 11,000 children attended the Wednesday afternoon illustrated lectures for schools. The second course of illustrated lectures for schools began on March 16th and will be continued until the end of May. More than 14,000 pupils have already reserved seats for these lectures, all of which have to be repeated on different days of the week to meet the demands on the part of schools.

NEW MEMBERS.

The following members have been elected.

CONTRIBUTING MEMBER.

Harry E. Kohn

SUSTAINING MEMBER.

Raymond Pitcairn

ANNUAL MEMBERS.

R. D. Young Miss M. A. Lamb
Price L. Rogers

UNIVERSITY OF PENNSYLVANIA

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FOR SCIENCE
FOR CIVILIZATION

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SHANTUNG, CHINA'S HOLY LAND

BY

C. W. BISHOP

¶ The Purposes of the University Museum

¶ To give to Philadelphia a Museum that will be in keeping with its traditions, that will answer to its needs and that will sustain its historic repute as a Stronghold of Civilization.

¶ To assemble collections that will illustrate the achievements of Mankind in the field of Art, and to cherish and preserve this Heritage from the Past.

¶ To trace the origins of Civilization and to reconstruct the successive steps and the varied episodes that have attended its development.

¶ To encourage the Arts; and to demonstrate the debt that Civilization owes to the Artist and to the Craftsman.

¶ To encourage Research, to send out expeditions to excavate the buried cities of Antiquity and bring to light the records of the Past; to gather and preserve the early Arts and ancient Lore handed down by the vanishing races of Mankind.

¶ To promote a knowledge of Humanity and to disseminate that knowledge by lectures, by publications, by cooperation with the schools and through the medium of the University; to illustrate the unity of all races and the diversity of their Art, to inculcate a better and more sympathetic understanding of all peoples and to afford a just measure of the contribution that each has made to Civilization.

¶ By bringing the people into direct contact with the visible Past and its prolific life, to exert a civilizing and humanizing influence upon our manners and habits of thought.

THE MUSEUM JOURNAL

VOL. XII

PHILADELPHIA, JUNE, 1921

No. 2

SHANTUNG, CHINA'S HOLY LAND

NOT chance alone has brought Shantung, instead of some other of China's Eighteen Provinces, to the fore at the late Peace Conference. Since prehistoric times the region has been a pivotal one, exerting decisive influence upon the cultural development and the political destiny of all northern China. There, thanks no doubt to its fertility and its temperate and stimulating climate, the ancient Chinese civilization attained its highest development about the time of the wars between Persia and Greece. There, again, arose, in the fourteenth century of our era, the patriotic upheaval which ended in the expulsion of the powerful Mongol dynasty of Kubilai Khan, Marco Polo's illustrious patron. There, also, began the Boxer movement of twenty years ago—that ill judged, unfortunate, but wholly patriotic and self sacrificing effort on the part of the unschooled masses to save their country from foreign domination. Of the present day importance of Shantung in connection with the future of the Far East it is unnecessary to speak; the recent negotiations regarding its disposition at Versailles are still too fresh in our memories.

It has not been, however, its cultural and political significance that has rendered the province in a very special sense the Holy Land of so great a part of the human family. It is the presence within its borders of two sites dearer by far to the Chinese people than any others within the confines of the Republic. These are the sacred peak of T'ai Shan, holiest of mountains; and, some forty miles to the southward, the birthplace and the tomb of Confucius.

The railway journey from Peking southward carries one at first across the northeastern extremity of the great North China plain, that gift of the Yellow River, as is Egypt that of the Nile. As far as we can see stretch away the level fields, their monotony only broken, now and again, by the tree girt mud villages of the peasantry and by clusters of grave mounds, resembling haycocks, where the dead in a very real sense elbow the living. Along the line stations are frequent, and at every one, as the train passes, is the same crowd of soldiers, food vendors, passengers, coolies, carters, loafers, beggars,



Avenue and Memorial Gateway. The Approach to the Tomb of Confucius.

and, significant sign of the times, newsboys; all talking at once, bawling, shouting, screaming, gesticulating, pushing; but all good naturedly and with very few outbreaks of ill temper. Not the least of Confucius' many great achievements was the teaching of his people good manners. His precepts, spreading abroad among high and low during two thousand years, have established an ideal of poise and urbanity and good humoured give and take that has probably never been excelled. This ideal, naturally, is by no means always lived up to; but it is always present, and I have never yet, in travels in twelve out of the Eighteen Provinces, found an appeal to it, whether direct or indirect, fail of a ready response. This, I think, is the real reason why, as one so often hears said in the Far East, the better you get to know the Chinese people, the more you learn to like them.

Presently, as the train rushes on southward, occasionally crossing wide sandy riverbeds that in flood time become raging torrents, we see from the car window the faint blue of mountain masses rising like islands out of the level plain exactly as they did not very long ago, geologically speaking, out of a shallow sea. Steadily their features become more and more distinct as we approach. But not even the golden sunlit haze of autumn can soften their gaunt and craggy outlines. Not a tree breaks the sweep of their slopes. Everywhere naked rock crops out, and all about their bases the gulches seaming their rugged sides have spilled out upon the fertile lowlands fans of detritus—sand, gravel, and even huge boulders.

No such abomination of desolation presented itself to the view of the men of Confucius' day as they gazed upon these mountains. Then they were clad from crown to foot in magnificent sweeping robes of green—chestnut and cedar and fir, and elm and walnut and birch. Forests of oak and of pine are especially mentioned, in the fragmentary records of those days that have come down to us. Even on the plain, widely cultivated though it already was even twenty-four hundred years ago, large areas were still covered with virgin forests, through which meandered deep, placid, well shaded streams, dependable the year around. The *Book of Odes*, among the earliest of surviving Chinese literary remains, is filled with references to the songs of the woodmen, the felling of trees, and the use of timber for building and for fuel. Numbers of such names as Peh Lin, "North Wood," and Ta Lin, "Great Wood," attached to places where nowadays woods there are none, tell the same story.

The onslaught upon China's forests commenced with the over-

throw of the feudal system, two hundred years before our era. The old nobility, full of zest for out door sports of all sorts, loved the woods and protected them for the sake of the game they sheltered—tiger and leopard and bear and wapiti and wild boar. The wretched serf caught stealing firewood was apt to meet with short shrift, and the felling of timber without leave was savagely punished. The overthrow of the old social system by the all conquering “Ts’in Shih Huang-ti—he of the Great Wall—threw open these areas to the peasantry. The new bureaucratic government encouraged the opening up of land, for the sake of the additional taxes it brought into the Imperial treasury, and because the woods formed lurking places for bandits and rebels. The people wished to add to their holdings of arable land, to secure fuel and building materials, and to destroy the lairs of the wild beasts that had so long taken toll, unchecked, of their herds and their crops. So the process went on, until now the hills are practically stripped over a great part of the country, and enormous areas of fertile lowland, buried deep under layers of sand and gravel swept down from the denuded heights, are absolutely ruined. Scientific foresters tell us that at the very least fifty years will be required for the reforestation of merely the more important watersheds. Nowhere in the world, probably, is there a more striking example of the disastrous effects that follow man’s uncontrolled interference with the delicate balance of Nature.

We leave our train at the small provincial town of T’ai-an Fu, the regular starting point for the ascent of the sacred mountain. But before beginning our climb it will be of interest to gather what we may of the story of the mountain and its meaning to the Chinese people.

In the time of Confucius T’ai Shan belonged to the State of Ts’i, one of the larger of the practically independent feudal territories into which China was then divided, and the one which acted as buffer against the marauding barbarians then dwelling to the north and east. Strong, progressive, and well organized, Ts’i was feared and respected by all, Chinese and barbarian alike. We catch a reflection of the spirit in which it was governed in a delightful bit of folklore that has come down to us from those distant days. The marquis of the neighboring state of Wei, says the legend, once bragged to the ruler of Ts’i of a wonderful carbuncle that he had, an inch in diameter, fastened to his state chariot and casting its beams far and wide. “My jewels,” replied the lord of Ts’i to the boaster, “consist of four loyal officials who form the main bulwarks of my power, and



The Tomb of Confucius.

whose integrity and ability shed their light throughout my entire state." Whereupon, we are told, the marquis of Wei hung his head in shame.

The cult of the holy mountain belongs to Taoism, that one of the three great religions of China which has been called the real creed of the common people. The teachings of Confucius represent the ideals of character and conduct prevailing in his day and long before, among that ancestor worshipping feudal aristocracy of which the sage was himself a member. The origins of Taoism, on the other hand, are to be sought in the animistic beliefs and magico religious practices of the despised common people—their inheritance from the dim and barbarous prehistoric past. The teachings of the Taoist philosophy never lost the traces of their lowly origin. What their democratizing tendencies and their contempt for petty human distinctions really voiced was the popular feeling against the tyranny, the extravagance, and the bloodshed of the haughty and magnificent aristocracy.

For centuries Taoism, confined to the ignorant and voiceless masses, made but little headway. But when the mighty Ts'in Shih Huang-ti, one of the world's very few original really geniuses, destroyed the feudal system and built upon its ruins a true centralized empire, he encouraged the ancient folk beliefs as an additional means of combatting the pretensions of the aristocrats and their adherents. Then it was that Taoism began to assume something of its later shape, with the incorporation of numerous new elements, some undoubtedly of western origin. Among the latter were beliefs such as those in the transmutation of the baser metals into gold, and in the existence of an elixir of life—ideas almost precisely similar to those held by our own mediæval alchemists, and unquestionably derived from some common source.

The connection of T'ai Shan with the faiths of the people goes far back of this period, however. In the ancient Chinese view, the attributes of the mountain seem to have fallen into two general classes. For one thing, its mere weight and mass, it was thought, must without doubt tend to insure the stability and security of the surrounding country and its immunity from such terrestrial catastrophes as floods and earthquakes. Again, it was looked upon as augmenting the fertility of the fields and the yield of harvests through its character of a "cloud compeller" or gatherer of moisture giving vapors. In harmony with the general practice of primitive times, the mountain was first regarded as itself alive. It was only later that it began to be looked upon as merely the dwelling place of a tutelary spirit.



The Temple of Confucius at Ch'ü fu.

Like other folk cults, that of the ancient Chinese masses was devoid of any ethical features, at least in the later and more developed sense. This element, with its accompanying notion of future rewards and punishments, was originally quite unknown to the worship of the sacred mountain, and came to be added to it much later, during the great T'ang dynasty (A. D. 618-906), as a borrowing from Buddhism. It is exactly this feature, however, which has in time rendered the god of T'ai Shan one of the most widely worshipped in China. In his character of the Judge of Hades, casting up on his abacus the debits and credits of departed souls, he has come to hold an exceedingly firm place in the popular imagination. Temples dedicated to him occur in every town of consequence in China. In spite of this great vogue of his, however, he is not permitted a monopoly of the sacred mountain. There is also a Goddess of T'ai Shan, the Princess of Colored Clouds (corresponding to the "rosy fingered Dawn" of the Greeks), who enjoys among the women of North China, the same popularity possessed in regions further south and west by the Buddhist divinity, Kwan-yin.

One of the striking things about the religion of China of feudal days is the entire absence of female divinities. The old aristocratic and patriarchal régime rigidly refused all equality of consideration to the fair sex in either the physical or the spiritual world. Yet modern China has a large quota of goddesses, many of them rivalling in popularity their masculine coadjutors. It seems probable that this change of attitude was due, in its beginnings at least, to the influence of the old aboriginal population of the Chinese coast lands. The Japanese, closely akin to these in many respects, have always had female divinities, the Imperial family itself, as is well known, tracing its descent not from a Sun God but from a Sun Goddess. And the various goddesses now included in the Chinese pantheon seem practically all to have originated in regions along the coast, which remained in aboriginal hands till well within the historical period. Thus the worship of Kwan-yin, the Goddess of Mercy, finds its focus in the islands near the mouth of the Yangtse, in a district still reckoned as barbarian in the time of Confucius, and its germ is almost certainly traceable to an aboriginal sea goddess cult taken over by the syncretizing Buddhist missionaries. Again, the belief in Ma-tse, the patroness of sailors, is especially characteristic of the coastal province of Fukien, which became Chinese only in the sixth century of our era, and is still imperfectly assimilated.



The Wordless Stone in the Temple Grounds at T'ai-an Fu.

T'ai-an Fu, with its pleasant suburbs, its temple courts shaded with noble trees, and its wall dating from the time of the Ming emperors, the master builders of China, is a not unfavorable specimen of the Chinese provincial town. Its whole atmosphere is one of peace, calm, and the dignity that comes of agelong existence. Perhaps this is due, in part at least, to the way in which it is so wholly dominated both physically and spiritually by the great mountain mass, towering nearly five thousand feet above it only a few miles to the northward.

It is quite possible to accomplish the ascent and return to the city in one day. To do so, however, is to miss much. Better far is it to go as the pilgrims go, tramping leisurely along, with many a pause to rest and to admire the beauty all about—beauty of mountain and cloud and plain, with the warm, mellow sunlight over all.

Our preparations for the ascent made the night before—coolies and mountain chairs engaged, and needed wraps and eatables got ready—we start out in the clear, cool, stimulating morning by paying a visit to the T'ai Miao, the fine old temple occupying the whole northwestern quarter of the town, on a site where has stood a sacred edifice of one sort or another throughout the past two thousand years. Almost deserted except during the pilgrim season, its shaded courts are charmingly restful and still. Within its areas are numerous large inscribed stelæ of great historical interest. One monument, which bears no inscription and which in consequence is known as the "Wordless Stone," is said by popular tradition to have been erected by the great Ts'in Shih Huang-ti himself. In reality, however, it is undoubtedly of Buddhistic origin and probably not older than the sixth or seventh century of our era. Of the type known as a *ch'uang*, it consists of several decorated stone drums superimposed one upon another, the largest not far from thirty feet in circumference. The ornaments chiselled upon its surfaces appear to represent lotus leaves and clouds, and some of the detail is really wonderfully fine.

The mountain chairs in which the ascent is usually undertaken are carried by Muhammadan bearers, a sturdy lot, apt to be refractory and take advantage when possible, but on the other hand straightforward, friendly, and quick to see a joke, even when against themselves. Tradition states that the Muhammadans of China are descended from an army of Arab auxiliaries who settled in the country during the T'ang dynasty and took to themselves native Chinese wives. Be this as it may, the adherents of the Prophet in China are in form, feature, and dress practically indistinguishable



The Southern Heavenly Gate. Entrance to the Summit of T'ai Shan.

from their Confucian and Buddhist and Taoist fellow countrymen. Very rarely do red cheeks, a more European cast of countenance, and the absence of the so called "Mongoloid fold" of the eyelid—that feature which, to Occidentals, gives the impression that the eyes themselves slant—suggest that we have here a race which is even in part non-Chinese in origin. Even the mosques are scarcely to be distinguished from temples, save by the absence of images and the presence of an occasional Arabic inscription. The refusal to eat pork, of which the Chinese in general are so fond, is one of the few things in which the Muham madans differ radically from their fellow countrymen. In the maintenance of this particular taboo they are very strict indeed; I have had coolies in my employ, when asking for empty provision tins which I was about to throw away, carefully inquire whether they had been used to contain swine's flesh.

Over the lowlands it is well to ride as much as possible in our chairs; there will be walking enough farther on. From the city wall the path rises gently toward the base of the mountain which towers ahead of us to the north, its peaks carved by the rains and frosts of ages into many a fantastic buttress and pinnacle and turret. Far away to the left the chair men point out, on an isolated spur, the ruins of a wall, one of those places of refuge so common in the hilly districts of China and so mutely eloquent of the terrible insecurity of life among the poor country people during periods of disturbance. This particular fortalice, so the men tell us, was built and held by a band of heroic maidens in some sad time of invasion or rebellion; but when it all occurred they are unable to say.

Now and again we pass through *p'ai-lous*, those memorial gateways set up by a grateful people in honor of some exceptionally rare and admirable character, such as an honest mandarin, or a widow who has signalized her respect for the marriage bond by refusing ever to wed a second husband. In the ancient feudal days, some hundreds of years before our era, it was customary for rulers to bestow upon worthy subjects insignia of honor, and these were displayed at the gateways of the native towns and villages of the recipients. In time special gateways came to be erected for the purpose; and finally the gateway itself became the commemorative sign, as it remains to this day.

The road approaches the mountain along the nearly dry bed of a torrent, which has brought down vast quantities of boulders and pebbles to spread out over the fertile ground below. Stone walls



Monument on the Summit of T'ai Shan Erected About 100 B. C.

surround the fields, a rather rare feature in North China, where so much of the soil is pure alluvium, unmixed with stones or gravel. Waterworn stones, too, embedded in mud, form the material for the huts of the country people; many of these are roofless and deserted, with only the gable ends standing—counterparts of the “bishops’ mitres” of war harried mediæval Europe.

Soon after the actual ascent begins we turn off to the left for a moment to visit a small temple in which is kept the mummy of a Taoist hermit who left this mundane world in 1703, at the age of nearly one hundred. As we mount higher and higher the air becomes cooler, more bracing, and more inspiring. The road along its level stretches is shaded by avenues of fine cypress trees (*Thuva orientalis*), which only the ægis of the holy mountain has saved from going long ago for fuel or coffin boards or lumber. Slopes are ascended not by ramps but by flights of stone steps, neatly hewn and put in place; our men tell us that these number seven thousand, which is doubtless not very far from the truth, since the crest of the mountain rises between four and five thousand feet above the town. In a few of the places are seen very ancient and much worn steps, cut in the living rock. These, says tradition, are as old as the days of Confucius; and tradition may well be right, for we know that pilgrimages to this mountain have been going on from prehistoric times, and some sort of path must very early have been constructed. The modern pilgrims’ way, paved with stone slabs and provided in many places, particularly where it skirts the brink of the torrent, with a tasteful stone balustrade, is only a little over a century old. In winter it is said to be very dangerous from the sheets of ice which form upon the flights of steps.

As we advance the animal life becomes noticeable. The bird life is rich and varied, lizards dart over the rocks, and butterflies flutter gaily about the wild flowers, among which a delicately beautiful mountain pink is not uncommon. Inscribed tablets, some of really tremendous size, and many very old, meet us at every turn, the vertical lines of the writing in closest keeping with the sheer perpendicularity of the cliffs on which they are cut. The effect is as different as possible from anything that could be produced by similarly placed signs in our alphabetical lettering with its cold and formal angularity and its horizontal lines. There is something strangely personal, vital, almost esoteric, in the Chinese ideograph. Bound by no rigid convention, the writer is able to put into his brush



The Well of Confucius Ch'ü fu, Shantung.

strokes the same intimate and individual quality of self expression which with us is the peculiar province of the painter alone. Hence in all these innumerable inscriptions about us there is nothing inharmonious—nothing to desecrate the natural beauty of the landscape. The sentiments which they express help us, too, to realize that the gorge through which we are passing and the soaring heights ahead have been accounted by generations of men as holy ground.

At one point in the ascent, where we pause to rest, Chinese historians tell us that the emperor Ts'in Shih Huang-ti was once overtaken by a heavy shower and found refuge under a mighty pine, which in gratitude he ennobled with the title of *Wu-ta-fu*, or "Grand Official of the Fifth Degree." Between 3,000 and 4,000 feet above the sea, on a slope across the canyon, is a grove of pines, the last remnants, perhaps, of the forests for which the mountain was anciently noted. The effect is quite parklike, the stately trees standing well apart, with expanses of sunlit grassy sward between. It was here—about apparently, that Confucius encountered a countrywoman who was mourning the loss of her husband, her husband's father, and her son, all devoured by tigers, but who refused to move to better settled regions on the ground that the presence of man-eating tigers was better than that of unjust rulers. The story is told, of course, to point a moral; but the very fact that tigers are mentioned in this matter of course way paints all the more vividly the picture of the holy mountain as it was in the sage's day, with its dense forests, its jungles, and its beast haunted coverts.

Above the zone of pines the stone stairs grow rapidly steeper and the intervening levels fewer and shorter. At length one precipitous flight of nearly four hundred and fifty steps brings us to the Nan T'ien Mên, the "Southern Heavenly Gate," a stately portal whose arched passage gives access to what is officially regarded as the summit of the mountain. In reality, however, once past the Nan T'ien Mên, the path rises sharply to the right, through clusters of huts, under other gateways, and past a succession of temples, before we arrive, just at sunset, at the true summit of the mountain, a rocky pinnacle falling away abruptly on all sides save the south, and surmounted by a temple sacred to the god of T'ai Shan, the great Sovereign of Jade.

As usual with temples and palaces in China from the remotest times, the main building here faces south, with lesser structures flanking it right and left, and the gateway in front looking out upon



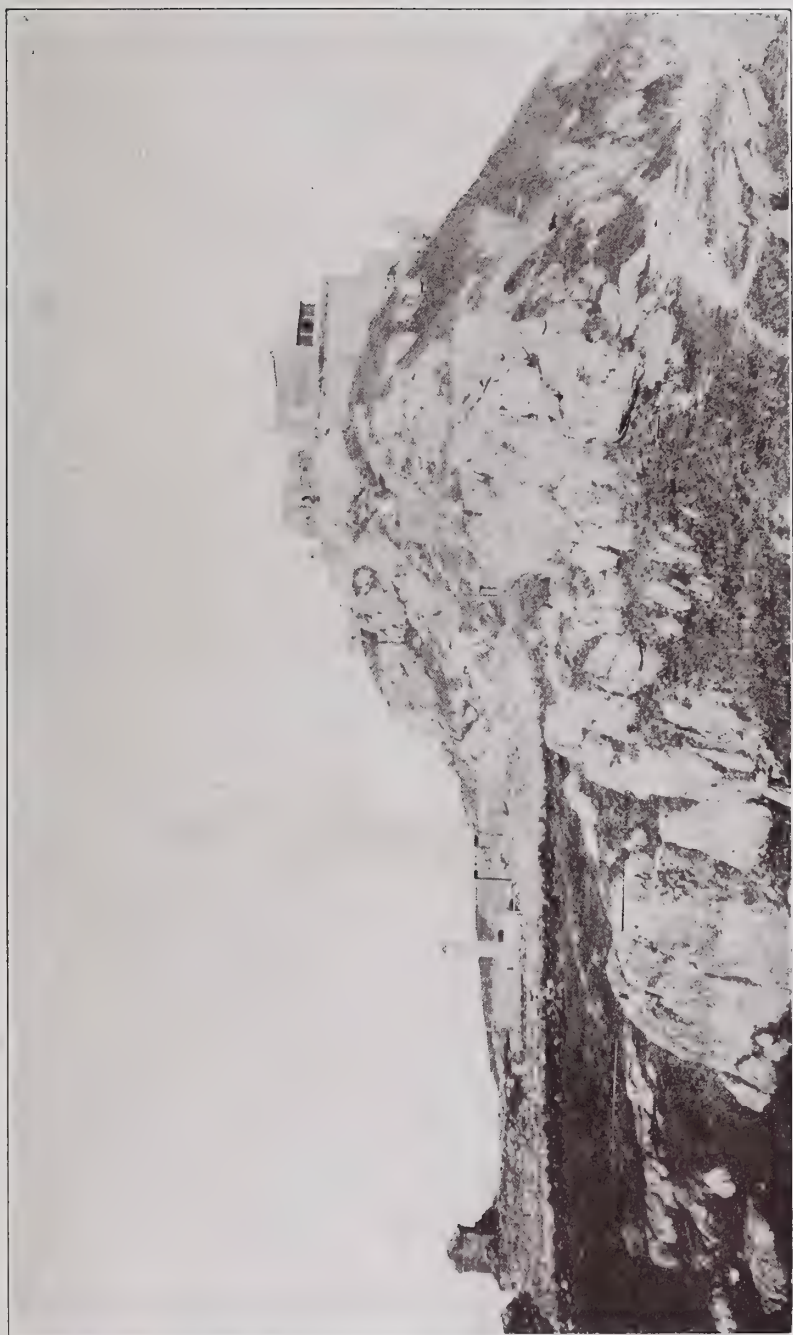
Part of the Pilgrims' Road.

the terraced approaches. In the courtyard thus formed is an octagonal enclosure with a carved stone balustrade, surrounding a weather worn and fissured rock regarded as the highest point of the mountain. In front of the main building a few belated worshippers quietly go on with their devotions, oblivious of our presence. We are made welcome, with grave courtesy, by the resident Taoist priests, clad in loose coats and trousers and with hair done up in a topknot—the old native custom of China before the conquering Manchus, in the seventeenth century, imposed their own garments and queues on their new subjects.

While our supper, of simple monastic fare, is preparing, we stroll about the balustraded galleries flanking the group of buildings. Toward the west the huge red ball of the sun is setting in the dim haze of dust that at all seasons floats over the great North China plain. To the east, through the gathering darkness looms a subsidiary summit, hardly lower than that upon which we are standing. Northward stretch other ridges, serrated, treeless, with gloomy gulfs already veiled in night. To the south the ground slopes away, at first gently, then falling sharply in a welter of precipice and buttress and crag down to the plain far below. All is quiet and stillness and peace; even the breezes are hushed; and the clear sky overhead, now just beginning to display its twinkling lights, gives promise of a cold night. The priests tell us, in fact, that although October is not yet half gone, they have already had one flurry of snow, which, however, soon melted.

Presently a young priest brings us supper, and there, by the dim light of a lantern, on a rough table before the original altar, we fall to with our chopsticks on huge bowlfuls of delicious noodle soup, piping hot and flavored with soy, next to hunger the finest of sauces. Then, on plank bedsteads, beneath the great images towering above us in the darkness, we turn to for our night's sleep.

Dawn comes, crisp and bright. A hasty breakfast, and then we start out to explore the sacred summit. On the terrace just below the entrance to the main court of the temple stands a tall plain slab something over sixteen feet high, surmounted by a roof shaped capstone with the straight eave lines which all Chinese roofs displayed until the fashion of upturned corners came in, a few centuries after the commencement of our era. This monument bears no inscription of any kind. Locally, like so much else in China that partakes of the colossal and the grandiose, it is ascribed to Ts'in Shih Huang-ti. It



Temple Crowning the Summit of T'ai Shan.

is, however, probably a little more recent, having apparently been set up by the emperor Wu-ti, of the Han dynasty, a decade or so before the birth of Julius Cæsar. Of a sort of stone not found upon the mountain, the task of transporting it to these heights must have been tremendous.

The so called "eastern summit" next invites our attention. Upon it stand the ruins of what was once evidently a stately temple enclosure, marking the spot, says tradition, where the emperor, Wu-ti, just mentioned, performed the great *Fêng* sacrifice in the year 110 B. C. There was something mysterious about this rite—a mystery that later times have failed wholly to clear away. The popular belief has been, ever since Wu-ti's time, that the custom was originally inaugurated by the fabulous Divine Emperors of old, in the mythical period of four thousand years ago. This notion, however, it is practically certain was first promulgated toward the close of the second century before our era, in order to afford a precedent for the celebration of the rite by Wu-ti himself. Certainly no such ceremony had ever been performed before his time within the true historical period. The manner in which he conducted the rite has a flavor of the mysterious too; for, besides himself, but one functionary was allowed to be present, and this man died a few days later. There is a very widespread idea, found in all parts of the world, that rites partaking of a magical character must be kept strictly secret, if their efficacy is not to be lost. The suspiciously opportune death of the emperor's helper looks very much as though His Majesty were taking no chances of information being divulged.

Farther east still the mountain falls away in nearly sheer cliffs, down into tremendous gorges. Across a spur terminating in one of the greatest of these precipices is built a substantial wall into which is let an inscription, "Thou shalt not commit suicide." Suicides with us are almost invariably due to selfish reasons. The motive which leads the egoistic product of our western civilization to play the part of his own executioner is usually the wish to escape from some unpleasant situation in which, through fate or folly, he finds himself placed. Not so in China. There a frequent motive is the offering of one's own life as a vicarious sacrifice—a substitute for the life of some loved one. The idea is that the Rulers of Human Destiny about to deprive some individual of life, may be bought off by the death of another. It is this pathetic belief that has caused so many

to cast themselves over this precipice before us that the guard wall and deterrent inscription have become necessary.

Slightly south of the Cliff of the Suicides yawns another fissure, hundreds of feet deep, giving out upon the plain dimly seen through the haze below. Across this cleft there toppled, at some time in the far distant past, a great column of rock. Broken by the fall into several huge rectangular fragments, these by some freak of fortune wedged themselves in place, forming a natural stair with fathom high steps. This the Chinese call the "Bridge of the Immortals"—those anchorites and recluses upon the mountains, who, according to Taoist teaching, through a life of abstinence and holy living win eventually to such absolute mastery over the flesh that the laws of time and space and gravity lose all power over them, and they soar away through the clouds to a glorious immortality in the bright realms under the gentle sway of the "Royal Mother of the West."

A more charming view than that from the southern face of the sacred mountain it would be hard to find. To the right, as one looks down over the cliffs, is the valley up which climbs the long pilgrim trail. Nearly due south, barely seen through the morning haze, is the flat rectangle that marks the city of T'ai-an with its protecting wall. Closer at hand, on the slopes and scarps beneath us, are masses of rock in wildest confusion, worn, seamed, and savage, but all transmuted by the alchemy of the glorious autumnal sun. About us, beds of fragrant mint, and crimson pinks and asters and bluebells attract swarms of butterflies and bees. In the sky and on the heights ravens and magpies and kites wheel and soar and perch. Small wonder that to such a sweet scene of calm and utter aloofness from the world men have come for thousands of years, seeking peace and quiet and rest for their souls.

The area at the top is not large, and a very few hours suffice to see it all, though one would not be sorry to tarry longer. Shortly after midday we begin a leisurely descent occupying most of the afternoon. By the time we reach the mouth of the valley, where it debouches upon the plain, the sun has set, the chill night has come on, and off to the left, over the shoulder of the dark mysterious mountain, rises resplendent the full moon, with black cedar boughs athwart its blood red face.

Next morning a way train carries us forty miles southward, across rolling agricultural country, to the station whence we are to go, by cart, to visit the temple and the tomb of Confucius, at Ch'ü-fu, a



Preparing Memorial Tablets on the Ascent of T'ai Shan.

few miles to the eastward. Here, as is well known, still dwell the lineal descendants of the Sage, after nearly eighty generations—theirs the longest authentic pedigree in existence; it is as though a modern Greek family could trace its descent from one of the Seven Sages.

The road across the plain, though not bad as roads go in China, is merely a cart track across country, dusty, deeply rutted, and crossing the occasional shallow streams by fords. It is chiefly for the sake of having some means of crossing the water dry shod, and of retsing occasionally, that we hire a cart—one of the variety universal in North China, springless, two wheeled, and with an arched tilt or canopy, open in front; built with an eye to endurance and hard usage rather than comfort. Other vehicles much in use here are enormous wheelbarrows with a pair of handles at each end, and perhaps a donkey to help in the pulling. The Chinese wheelbarrow seems much more scientifically designed than ours. One repeatedly sees a single coolie cheerfully trundling along a load of eight or ten persons, or an equivalent weight in produce, mile after mile, at a steady rate of two miles an hour. Where is the Occidental labouring man who, in one of our wheelbarrows, could push a load of half a ton, fifteen to twenty miles a day, seven days in the week, over such roads as those of China?

The country through which we pass is densely populated, and so close together are the tree embowered villages that one seems passing continually through one vast wood, interspersed by clearings planted with beans, sweet potatoes, fall wheat, and peanuts; the latter just harvested, the gaunt black village pigs are busily gleaning in the upturned furrows. Here and there are groves of persimmon trees, their huge luscious fruit worth travelling far to taste. Now and then appear graveyards; and occasionally we pass sacred groves, where the yellow roofs of roadside temples gleam among the trees. We are passing through what, in Confucius' day, was the small feudal state of Lu, whose rulers traced their descent from the royal clan of the Chou line, and whose privilege it was to employ the royal ceremonial in their state sacrifices. Every year, in the sixth month (the year under the Chou dynasty began with the winter solstice), they offered a white bull to the manes of their founder, the illustrious Duke of Chou, who flourished according to the commonly accepted account, about eleven hundred years before our era.

The small size of Lu made its participation in the wars of the period highly dangerous, and its rulers strove desperately to maintain the strict neutrality upon which their independence hung. It was

partially this enforced aloofness from the current life of the time, and partly the tradition of its origin and its cult connections, which caused the little state to emphasize so strongly its ritual and cultural and literary preëminence, while its larger and more powerful neighbors were vying with one another in savage struggles for more material supremacy.

Hence it is natural that Confucius' whole life and teaching should have been coloured by conservatism, by the desire to return to conditions which he pictured as prevailing during the golden age of the dynasty, and by the ambition to restore the decrepit old monarchy to its pristine power and glory. His noble birth too no doubt influenced him; for his father, a noted warrior and a man of herculean mould, traced his descent from the ancient emperors of the Shang dynasty, dethroned over half a millennium before.

To his vast credit, considering the troubled and anarchic times in which he lived, there is no evidence, in his career, of any self seeking, or of disloyalty either to his principles or to his country. True, he was accused by his foes of being too haughty and unbending in demeanor, but this attitude, so far as it really existed, was doubtless due partly to the aristocratic traditions of his family and partly to his concept of the nature of the social relations. In character we know that he was rigidly puritanical, intensely conservative, upright, and sincere, although he once excused the nonfulfillment of a pledge by saying that a promise given under constraint was not binding—in this merely anticipating our own modern legal view.

Very much of what Confucius upheld as the standard of conduct applies today as much as it did in his day, and there need be little reason to despair of the future of the Chinese nation, impregnated as thoroughly as it is with the rules of behaviour which he taught. His concept was of an individual who was self respecting, modest, dignified, and sincere; consistent, true to his word, loyal, benevolent, and a lover of learning rather than of wealth. No time server, yet he must be in full sympathy with human nature and with the best feeling of his time; not given to excess in any form, unflinching where principle was at stake, and unafraid in the presence of death. Finally, he must be correct in dress and demeanor, cleanly both in person and in deed. His ideal is one that can not but approve itself to all right thinking men, of whatever race or creed or political faith. And it is one which has had, in the past two thousand years, innumerable followers—men who in times of domestic turmoil or foreign invasion



The Bridge of the Immortals.

have not shrunk from sealing with their blood, in the face of every temptation, their unswerving loyalty to duty and to country.

Yet Confucius, by the men of his own time, was reckoned a failure. This was because his own expressed purpose was the restoration of what he conceived to be the state of affairs existing in the good old days, some hundreds of years before. In this sense Confucius' life was a failure—a failure as complete as the effort of Columbus to reach Cathay and Zipangu by sailing westward from Spain. But just as Columbus, all unwittingly, was the first to establish definite, conscious, and permanent contact between the two halves of the globe, so Confucius, though failing utterly in his attempts to check the steady decay of the ancient monarchy and the old social system upon which it was based, became in the fulness of time the great exemplar and beloved teacher of hundreds of millions of his fellow men. And in the future his influence is destined to extend over the face of the globe to just that degree in which the newly awakened Chinese people find themselves called to participate in the common affairs of mankind.

It is of the greatest importance, in order to understand the meaning of Confucianism, to distinguish carefully between the sage's own teachings and the cult that has in later times come to be built up around him. It has been rather flippantly said that Confucius himself, though not an agnostic and disbeliever in the efficacy of prayer, has become himself a god, the recipient of the invocations of countless thousands. This is not quite true. The Far Eastern concept of divinity is not at all that of the modern Occident; nor, though less unlike, it is quite the same as that once held by the peoples of classical antiquity. Canonization would come distinctly nearer than deification to expressing in terms clear to our Occidental thought the process to which Confucius has been subjected. Ancestor worship, in both East and West, has played a part—perhaps the chief part—in the rise of this concept, of canonization in the Occident, or deification, if one chooses to insist upon that term, in the Orient. The belief that the dead still live, that they continue to take an interest in the lives and fortunes of their people, watching over their prosperity, rejoicing in their well being, aiding them in adversity, was one to which ancestor worship accustomed mankind, whether dwelling by the Tiber or by the Huang Ho. Once grant the postulate of the sentient existence of the soul after death, and all the rest follows naturally. It is in this sense that Confucius has been made an object

of worship by later rulers, who found in his teachings of conservatism and filial piety and loyalty a source of invaluable support to their dynasties. It is for this reason, too, that honor has been chiefly paid him, not by the actual founders of new ruling families, but rather by their successors, after the lines had become endued by time with something of the sanctity of legitimacy and vested right.

With all this cult of the Sage, however, his own teachings have nothing to do. Indirectly, in fact, they discourage it; for he himself said that worship paid to the ancestors of another was vanity and not to be indulged in. He never set himself up as an object of worship, or even as a teacher of new doctrine. On the contrary, he expressly claimed to be nothing more than an interpreter of the past, a systematizer and recorder of the best that was recounted of the lives of the great men of old. In so far as his system took account of any religious element at all, it was linked with the ancient ritualistic state worship of T'ien, the Sky, which had come down from historic times, and with perhaps even more ancient cult of ancestors carried on privately by each individual family group. The cult of Confucius, with its temples and its ritual, will no doubt in time pass away, as so many other cults have done in the past, and as so many are doing in the present age of disintegration and intellectual rebirth. But the ideal of life and conduct set up by Confucius can not pass away; for it is something of universal application and must remain such so long as man remains a social being.

Even to the foreign visitor from the Occident not too blinded by inherited prejudice to realize the essential and inherent oneness of mankind, this region through which we are passing seems holy ground, and it is possible to understand in a measure what it has meant during so many generations to the Sons of Han. It is less through age than in continuity of conscious racial, cultural, and political existence that China exceeds the rest of the modern nations of the earth. For example, the very name of the little sacred city which we are slowly approaching across the plain dates back to a time when Thebes and Babylon were the leaders of the western world, and Athens and the imperial city by the Tiber were yet unknown. And that long gray wall which we begin to see, presently, far away on our left front, surrounds a plot of ground that has been the burial place of a single family during the space of time that has elapsed since Leonidas died at Thermopylæ.

Of the beginning or end of this wall we can see nothing; for it



Ascent of T'ai Shan. Boulders Washed Down as a Result of Deforestation.

encircles a space said by the Chinese to be forty *li*, or about thirteen miles, in circumference, and the graves of the descendants of Confucius contained therein are legion. One estimate places them at over a million; and certainly they number many tens of thousands. Assuredly men have gone on dying and being buried elsewhere, as they have done here; but where else is there such another graveyard, continuously used during more than two thousand years, and that by the descendants of one man?

The road at first seems bringing us direct to the cemetery. But presently it turns more and more to the right—southward—approaching as it does so a long avenue of cypress, gnarled and fantastic, which connects the town to the south with the great city of the dead nearly a mile to the north. Presently we enter the gate, and after a few minutes' walk through narrow and crowded streets we come to the great Kung Miao, the Confucian temple *par excellence*, original and pattern of all the countless others which have been planted wherever men of Chinese race have gathered together. Occupying nearly a quarter of the area of the little town, we find it a great congeries of courts, containing stately yellow roofed buildings, noble trees, and inscribed stelæ, of which, without the aid of a plan, it is hard to form any ordered conception. The main gate—opening southward, of course—is not for commoners like ourselves. We enter by a smaller portal to the side, and then, under the guidance of attendants, explore the various courts and sanctuaries and porticoes that open out before us. The approach to the main building is by a succession of stone terraces, with carved balustrades of white limestone closely resembling fine marble. The temple itself is a splendid example of the best Chinese style, with double roof of gleaming imperial yellow tile, supported, not by wooden columns, as is commonly the case, but by ten great stone pillars, exquisitely carved with entwining dragons. Within, in the dim cloistral light, is the gigantic seated figure of Confucius himself, arrayed in royal robes—a privilege which has been posthumously granted him; and in the same hall are statues of various ones of his principal disciples.

Interesting as is the temple, there is a spot in one of the secondary courts, in the eastern part of the great enclosure, which has for us even greater appeal. For it is here there stood, long ago, the house occupied by the Sage, and, beside it, the humble well from which he drew the water which he drank. Tea, of course, was then still unknown; and the Chinese of that period eschewing, as they still do,

milk and its various products, drank either water, or beer brewed from rice or from that most primitive of cereals, millet. As is well known, the great emperor and consolidator, Ts'in Shih Huang-ti, decreed the destruction of all literature dealing with the past of the feudal states which he had overthrown and incorporated in his empire. The task of destruction was rendered the easier by the fact that the cumbersome books of that day were written, not upon paper, which was still unknown, but upon slips of wood or bamboo, while copies were rare and their whereabouts usually well known. However, when the ancient house of the Sage was finally torn down, about three centuries and a half after his death and nearly a hundred years after the famous Burning of the Books, concealed within its walls were found copies of the revered Classics, written in the ancient character, even then almost undecipherable save by experts.

Although the Sage's house is gone, his well still survives. It is simple—merely a shallow excavation; for all the great North China plain, through its geological structure, is underlaid with water at no great depth from the surface. About the mouth is a circular stone curb, and enclosing it and the simple commemorative tablet is a stone rail, with tastefully carved posts and panels.

Our inspection of the temple and its various courts completed, we retrace our steps as far as the north gate of the town, and there strike off up the long avenue of cypress, northward, toward the great cemetery where the Sage lies buried. Part way up is a fine commemorative gateway with five spans—a glorified example of the *p'ai-lous* which we noticed on our approach to the base of T'ai Shan. There is too a stone bridge over a long since silted up rivulet. The road enters the grounds of the cemetery between gigantic stone figures of men and animals; near these an aged tree trunk, bound about with iron bands, is said to be one planted originally by Tse-kung, most famous of the Sage's disciples. Presently to the left of the road, we pass the grave of the grandson of Confucius, a plain earthen tumulus embowered in fine trees. The whole enclosure, in fact, is well wooded, the trees deriving their origin, it is said, from those set out by his three thousand disciples in honor of their Master; the story goes that these youths, coming as they did from every part of the China of that day (when everything south of the Yangtse was *terra incognita*, inhabited by savages and demons), set out each the trees representative of his own home, so that here were assembled every species of tree found in the entire country.

At the end of the road, or rather where it turns at right angles to the left, is the tomb of the son of Confucius, also a mere grass grown earthen mound. Just west of it is yet another, simple, not more than three or four yards in height, overgrown with rank grass and brush, and shaded by noble trees; in front of it, and a little to the right as we face it, is a stone slab whose inscription, in the ancient classical character, tells us that here lies buried the Sage himself.

Nightfall is approaching and the sky has become overcast and lowering. The gloom, the utter loneliness, and the clustering cedar and cypress combine to produce a feeling of solemnity and age and awe. The very lack of all architectural grandeur and pretentiousness seem to proclaim, what the Sage himself taught, that true greatness and worth are not material, but spiritual, not from without, but from within, that in simplicity and sincerity and unaffected poise and self possession does genuine nobility of character manifest itself. Few things more clearly demonstrate the innate good taste or the sense of the fitness of things that the Chinese people possess, than the simplicity of the sepulture which they have accorded the greatest teacher of their race.

The sun has set when we leave the tomb and commence our return across the plain westward toward the railway. Lights begin to twinkle in the villages and farmsteads, otherwise unseen in the darkness; occasionally a belated toiler passes us on his way to his night's rest; far off the baying of dogs is heard. Otherwise we might be alone in this ancient land as we plod through the darkness, deceived more than once by distant gleams on the horizon, till at last we come once more to the cluster of huts about the railway station, and seek the shelter of a native inn.

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¶ The Purposes of the University Museum

¶ To give to Philadelphia a Museum that will be in keeping with its traditions, that will answer to its needs and that will sustain its historic reputation as a Stronghold of Civilization.

¶ To assemble collections that will illustrate the achievements of Mankind in the field of Art, and to cherish and preserve this Heritage from the Past.

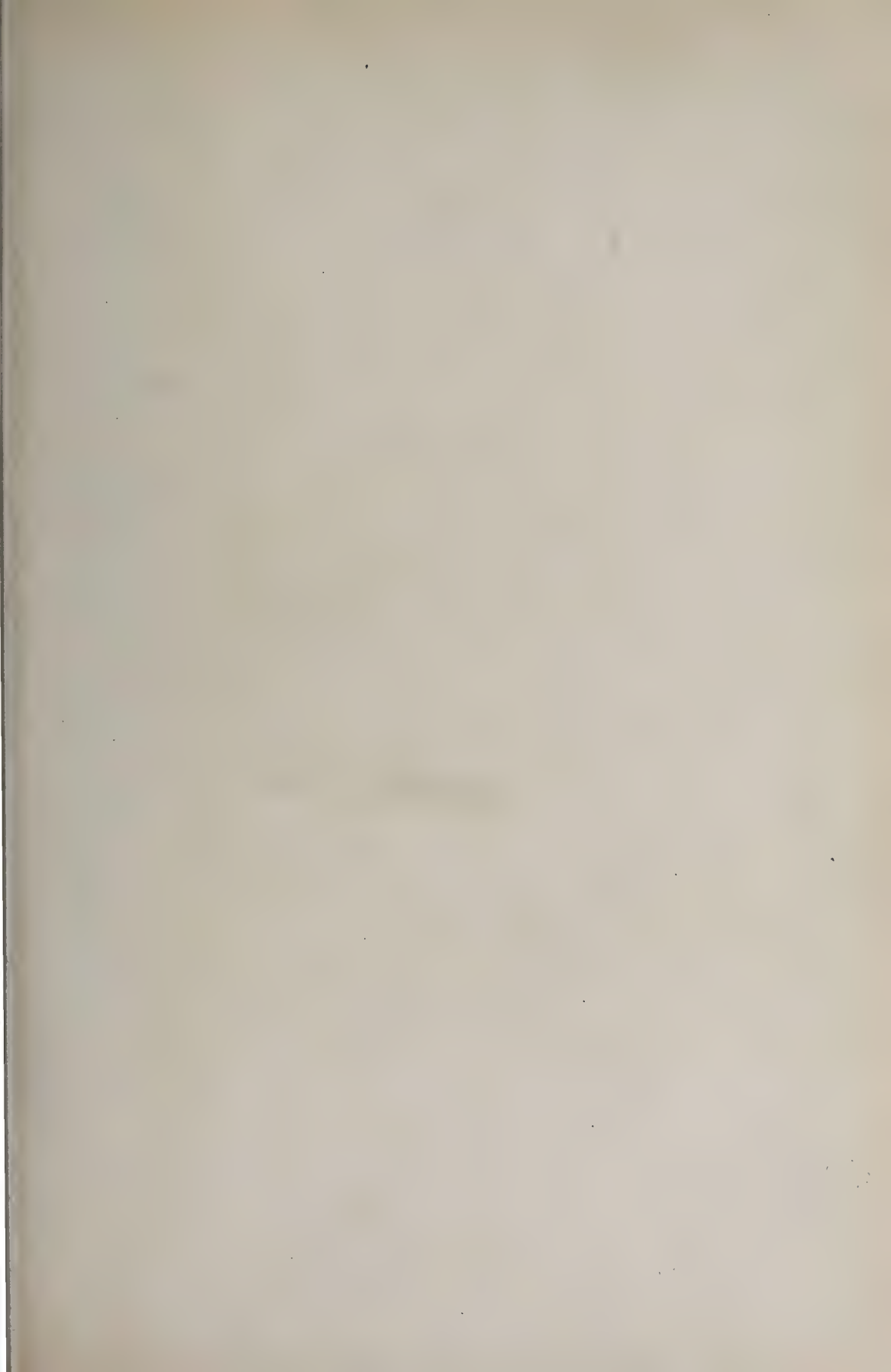
¶ To trace the origins of Civilization and to reconstruct the successive steps and the varied episodes that have attended its development.

¶ To encourage the Arts; and to demonstrate the debt that Civilization owes to the Artist and to the Craftsman.

¶ To encourage Research, to send out expeditions to excavate the buried cities of Antiquity and bring to light the records of the Past; to gather and preserve the early Arts and ancient Lore handed down by the vanishing races of Mankind.

¶ To promote a knowledge of Humanity and to disseminate that knowledge by lectures, by publications, by cooperation with the schools and through the medium of the University; to illustrate the unity of all races and the diversity of their Art, to inculcate a better and more sympathetic understanding of all peoples and to afford a just measure of the contribution that each has made to Civilization.

¶ By bringing the people into direct contact with the visible Past and its prolific life, to exert a civilizing and humanizing influence upon our manners and habits of thought.





THE VOICE OF NATURE SEEMS TO BE SAYING: THIS TEMPLE IS MY VERY OWN,
IT IS PLANNED AFTER MY OWN FASHION, IT RHYMES WITH MY
RIVERS AND MY WATERFALLS, IT IS MADE LIKE MY MOUN-
TAINS, IT IS ONE WITH MY THUNDERCLOUD.

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BAALBEK

BY GEORGE BYRON GORDON

Lecture Delivered at the University Museum, January 15, 1921

THE boundaries of the new Syria where it fronts the eastern end of the Mediterranean agree approximately with those of Ancient Phœnicia. As defined under the terms of the Mandate that gives Syria to France as a Mandatory of the League of Nations, the coast from the Gulf of Alexandretta on the north to a point below the ruins of Tyre on the south is included in Syria, and once more, as throughout the Ages, East and West meet on that narrow ground. For the first time since the Roman Empire, Syria passes under the control of a Western Power and its destinies are linked with a European political system for the third time in its more than three thousand years of history.

The part that Syria has played in the world's affairs was the natural consequence of its position on the threshold of Asia. For the European nations that used the sea, it was the gateway to the East, and for Asia it was the outlet towards the West. The stream of commerce and culture that had its sources in China and India, and that for two thousand years flowed westward across the continent, was discharged through Syria into the Mediterranean to be carried along the routes of ancient sea borne trade to European shores. It was the Phœnician who first controlled that discharge and opened the ports of Asia to the European traffic that came on the returning tide. For if Syria was the spout by which Asia's stream of wealth was directed to the sea, it was also the funnel by which Europe's wares, both material and moral, were poured into Asia even to the remotest part of China.

This direct impact of two civilizations, each backed by the resources, and penetrated by the forces of a continent, concentrating and impinging on a narrow space, vitalized the local genius and made Syria peerless in industry and in commerce, while the intel-

lectual and religious gifts that poured from her lap are among the forces that have shaped the course of Western civilization.

Syria still has the same advantage of position as it had in the older world. Its ports, opening on the Mediterranean, still look out towards Europe. Behind them is all Asia with its stores of wealth. Europe still asks for the spices, the fruits, the fabrics, the minerals and the oils of the abundant East and is willing to pay for them. New ambitions are brought to bear on the destinies of Syria and confident spirits do not hesitate to predict a return of its ancient eminence in the new life of a reconstructed world. To the student of history the idea is fantastic, for whatever its rôle in the future may be, it will be something very different from what it has been in the past. Not in a thousand years, with every ambition and high resolve, could all the mandates projected from Versailles summon the spirit or restore the substance of that ancient splendour of which Baalbek is the shadowy symbol.

Very little is left above ground of the civilization of the Phoenicians except the names of places, which indeed have in some instances survived all the changes of rulers. Such a surviving name is Baalbek which, in the ancient Phoenician tongue, meant the City of Baal. When the Greeks took possession, following the conquests of Alexander in the fourth century B. C., they translated that name into Heliopolis, the City of the Sun, for the Greeks recognized in Baal a solar divinity.

In the summer of 1919 I had the luck to spend five days at Baalbek and the place has haunted me ever since. It is my purpose to try to convey to the reader some idea of what I saw and learned of that abode of the gods.

The gods of the ancient world have a habit of coming back. They are not dead, being immortal; but I am afraid that they are having a very poor time of it just now and that they are suffering from poverty and neglect. I think that the attention of Mr. Hoover or somebody ought to be called to the deplorable condition of these languishing divinities. Some day when I shall have found time to start a society for the care and protection of homeless divinities and old gods in distress, I am going to see to it that all the old Things are accorded their share of decent treatment.

Of these ancient divinities that continue to haunt an ungrateful world, the old god Baal is one of the most persistent. In antiquity he was a very great and a very popular divinity. He was worshiped



Within the Temple of Bacchus you find that the roof has fallen and that the walls, presenting engaged Corinthian Columns are fairly well preserved.

FIG. 33.

all the way from Egypt to Babylonia and it was in Phœnicia that he had his favourite habitation. He was so popular wherever he went that the other Semitic gods had to work hard to compete successfully with him. The ancient Hebrews, both rulers and people, were always going over to Baal in spite of the awful denunciations of the priests and prophets of Jehovah, who was represented by them as suffering from violent fits of jealousy. Several changes were rung upon his name as he moved about among different peoples: Baal, Bal, Beel, Bel and Bil are the names by which he was usually known and the Hebrew prophets to whom he was a dangerous rival and therefore the personification of evil, sometimes called him Beelzebub. When, therefore, you appeal to Beelzebub, as I have no doubt you often have occasion to do, you are paying your respects to the old god Baal, Bal, Beel, Bel or Bil.

The Romans were the heirs to both Phœnicia and Greece when they extended their Empire to Syria in 65 B. C. Now Roman political sagacity was not bounded by any provincialism in matters of religion. When they took possession of a country they did not overthrow the altars that they found or drive the native gods into exile. They knew well enough that an exiled god is a dangerous customer and they knew that one of the ways to put themselves right with alien peoples was to make it up to their gods.

When, therefore, the Romans having occupied Syria, took possession of Baalbek, they adopted the Greek form of the name, Heliopolis, and they also adopted the old god Baal. They identified him with Jupiter, who thereupon took unto himself the attributes of Baal and was worshiped at Heliopolis under the name of Jupiter Baal. The scheme was a beneficent one, for Baal became more humane and civilized and Jupiter lost none of his dignity and, having some weaknesses of his own and a rather accommodating disposition, he had not the slightest objection to this identification of his name and worship.

The Romans entered Syria in 65 B. C. and the country today bears striking testimony to their beneficent rule and to their energy during the succeeding centuries. They stretched their roads like white ribbons across the map; they ran their aqueducts over mountain and plain; they flung their arches across rivers and ravines; they dotted the land with walled cities and at Baalbek they stand revealed to us as a race of giants with the powers of Olympian Jove. The site of each one of their cities was selected for a definite reason.

Palmyra was built in the desert to control the caravan trade from Mesopotamia, Persia, India and China at the point where it met the caravans coming up from Egypt and Arabia. And Baalbek was built because it commanded the resources of a productive region and because it commanded also the religious traditions of the Syrians.

Syria is divided by two parallel ridges, the Lebanon and the Anti Lebanon running north and south. Between, in the broad and fertile plain, is Baalbek, the Roman Heliopolis, forty miles north of Damascus. Five days' journey to the east across the desert is Palmyra and down along the fringe of the desert you can trace the lines where the Romans flung their mighty bulwarks round the world to protect it from the inhabitants of the dark outer spaces, represented on this eastern frontier by the wild Arabs of the desert. Behind these eastern bulwarks of their empire the Romans built in Syria a second and a greater Greece and its greatest monument was Baalbek.

As you approach Baalbek along the plain between the Lebanon and the Anti Lebanon you see in the distance six columns against the horizon rising majestically above their surroundings. As you come nearer you can see below these columns a mass of ruined buildings that take shape gradually as you approach. This is the acropolis and even from a distance the traveler can distinguish clearly two of its main features. The nearer of the two is what we may call for the present the second temple standing against the background of a larger edifice in which the six soaring columns are seen to be raised on a platform. Heliopolis was a walled city and the acropolis stood within the walls in the southwest area. Some of the ancient city walls are still standing and the northern gate is almost intact, but the principal object of interest is the acropolis, now a mass of ruins.

The second temple stood apart, a little to the south, raised on its own platform 15 feet in height. The main temple with its approaches stood on a stone platform raised 26 feet above the ground level. It was 1,100 feet long from east to west and 440 feet wide from south to north. This stone platform did not rest on a solid mass of earth or masonry. It was supported on a series of arched vaults of massive masonry running the length and breadth of the platform and crossing each other at right angles. These vaults are still intact and the platform above them is also unbroken. Besides these vaults there can be seen under the same platform, two large halls with walls and ceilings covered with beautiful and intricate sculpture.

The stairs ascending to the platform were on the east end. They consisted of a triple flight of stairs 160 feet long, nearly all of which have been removed by the Arabs. At the top of this flight rose the great gateway, portico or propylon, a word that I will use because it means a monumental entrance. This propylon was 160 feet wide and 36 feet deep. On right and left it was flanked by two massive towers and adorned in front by a row of twelve columns supporting the entablature. The back wall of the portico still shows twelve niches for statues of heroic size and was pierced by three doorways, the largest in the center being 26 feet high and 18 feet wide. The sockets without their bronze castings in which the great double doors swung are visible in the stone sills. In the thickness of the wall between these doors were two winding staircases leading to the roof, now fallen. The entire propylon, though permitting of measurement, is reduced to a mass of ruins.

The three doors led to a hexagonal court with a sunken basin in the middle surrounded by a row of Corinthian columns. On four sides of the hexagon were four great chambers with open façades adorned with Corinthian columns and six smaller rooms of irregular shape entered by small doors. The walls of the four large halls, still standing, had two rows of niches for statues, one row above the other. This hexagonal court was roofed over from the inner row of columns to the outer walls, the sunken area in the center being left open to the sky, so that you could walk around from the outer entrance to the inner entrance without being exposed to the weather. The traveler today looking westward from the court may envisage in one view the ruins of the great temple and its monumental approaches. In the distance, at a higher level, is the wreck of the temple itself with the six remaining columns rising above the snow-capped Lebanon mountains and etched upon the sky. This hexagonal court was 260 feet across and a triple doorway on the west side led to the square court which measures 440 feet from east to west and 385 feet from south to north. In this square court also was a sunken central area open to the sky. Around the margins of this open area stood once a row of Corinthian columns 25 feet high supporting a marvelous sculptured entablature nine feet high on which the roof rested. Behind these columns a wide covered passage ran around three sides of the court. Adjoining this colonnade and opening from it, a series of halls, some oblong and some semi-circular with open façades adorned with Corinthian columns sup-

porting another sculptured entablature, ran around the three sides of the court. In the open court itself are still to be seen two basins for running water, each basin being 68 feet long, 23 feet wide and 3 feet high, richly sculptured on the outside. Midway between these two basins stood the great altar 34 feet square.

This great courtyard is a jumble of ruins. Not one of the columns is standing and the whole space is strewn with fragments of noble structure that once formed part of cornice, capital, architrave and molding. In the walls of the chambers around the sides of the square court and the hexagonal court there can still be seen and counted 350 niches for statues. There is one more remarkable fact to be mentioned in connection with these two courts. All of the columns that adorned both of these courts and that adorned the propylon, about 200 columns in all, were monolithic shafts of red granite 25 feet high and 3 feet in diameter. That rose colored granite is not found anywhere in Syria. It is found only at Aswan in Egypt, 700 miles up the Nile. All of these granite shafts therefore were quarried at Aswan, floated down the Nile, rafted across the Mediterranean Sea and hauled over the Lebanon Mountains to be set up at Baalbek.

Now all that I have been describing is only the introduction, the approach, the vestibule of the principal edifice, and that edifice that roars so loud and thunders in the index was once the temple of Jupiter Baal and a wonder of the ancient world. It rose on a second platform 26 feet higher than the first or 52 feet above the ground level. It was 175 feet wide and 310 feet long and was reached by a flight of steps running the entire width of the building, 175 feet. A man standing at the great altar and looking up at the temple would see its broad façade towering 150 feet above his head. In plan the temple consisted of a cella surrounded by 54 Corinthian columns forming the peristyle and 8 forming the portico, 62 columns in all. Only 6 of these columns remain standing, the columns that loomed on our horizon as we crossed the plain. The whole structure was roofed over and the apex of the roof rose high above the tops of the columns, forming a triangular pediment in front. Within the west end of the cella was the sanctuary, and there must have stood the statue of the god, and as this would be of a size proportionate to the building it must have been of colossal dimensions. Of the massive walls of the cella itself not a single stone remains upon another.



A fragment of the cornice on which lion heads placed at intervals served as gargoyles to carry off the rain water from the roof.

FIG. 34.

I come now to an amazing feature that has taxed the credulity of generations of men ever since Baalbek was rediscovered in the sixteenth century. Around the three exposed sides of the temple, below the bases of the columns and at a distance of 25 feet from the wall of the platform on which it was built, there is to be seen today an unfinished rampart which remains exactly as it was left by the masons, the space between the rampart and the platform wall being filled in with solid masonry. I will only call attention now to the fact that the upper course of stones on the west side of the rampart consists of three stones, not counting the ends of the side courses, and that the total length of that west section of the rampart is 225 feet. Each of the two side courses, one on the north and one on the south, contains nine stones and the length of each course is 335 feet.

Before proceeding with the description of the temple of Jupiter Baal it will be necessary to get some idea of the style and proportions of the second temple, which is much better preserved. The second temple, if it stood by itself, would be remarkable for its size and

magnificence, but it is dwarfed by the immensity of its huge companion. Its entire structure is of fine white marble to which time has imparted a rich brown tone. Part of the peristyle is standing and the walls of the cella are wonderfully preserved. The columns of the peristyle are made in five sections each, they are 60 feet high and 5 feet in diameter; they support a fine entablature and the distance between the columns and the walls of the cella is 10 feet, and that space of 10 feet is bridged above by great blocks of stone reaching across the architrave to the wall and forming a vaulted ceiling exquisitely carved. In hexagonal spaces placed at intervals on this ceiling are portraits of all the gods and of their numerous progeny and with their emblems, reaching all around the building and looking down upon us from the ceiling, the carved decoration of which is altogether exquisite and wonderful.

Passing opposite the portico which, with the exception of the two columns of the southern end has fallen away, you find this portico consisted of eight fluted columns, the only free standing fluted columns at Baalbek. Here also you can see the upper part of the flight of steps that led up to the portico, over which steps the Arabs have built a castle.

The entrance to this second temple is 43 feet high and 23 feet wide and is surrounded by a border of beautiful sculpture. On the soffit of the lintel is carved a great eagle with wings outspread. The lintel is made of three stones, and many years ago the keystone in the center had become loosened and had slid down until it seemed to hang as by a hair. Sir Richard Burton, when he was Consul General at Damascus, built up a pillar of small stones to take the weight of the great keystone and support it. It weighs many tons. In the thickness of the wall, at the right of the door as you enter, is a winding stair cut out of the great blocks of stone. Passing within the temple you find that the roof is entirely gone and that the interior walls, presenting engaged fluted columns of the Corinthian order, are fairly well preserved.

This is the time to relate an incident in the recent fortunes of Baalbek which may serve both as a footnote to history and as a typical modern instance. In 1898 when the German Emperor made his tour of the East he visited the ruins, together with the Empress and the Sultan of Turkey. The Kaiser then obtained permission from the Sultan to send a German archæological expedition to make excavations at Baalbek. The mission, consisting



Each of the stones in position is 15 feet high, 15 feet wide and 44 feet long and there are 9 of them in the course. (Page 132.)

FIG. 35.

of twelve men, arrived in 1901 and they employed about four hundred natives making excavations for four years. My main purpose in referring to this episode is to call attention to two things that the German archæologists did, one good deed and another. They found the great keystone in the lintel of the doorway propped up as Sir Richard Burton had left it. They raised the keystone again into its original position and fastened it in place by means of a heavy iron strap sunk in the stone. They were then able to remove Burton's pillar without the risk of dropping the keystone and to continue their excavations about the entrance. That was what may be called their good deed. In one of the niches in the interior wall of the temple there was to be seen before the war a new tablet of white marble. That tablet contained an inscription in German and in Arabic. The German inscription was in very elaborate Gothic letters cut in the white marble and filled in with gilt. Above was the Emperor's coat of arms; then came the name of the Emperor; then that of the Empress; then the name of the Sultan of Turkey and last but not least, the name of God. Then followed

a long inscription highly complimentary to all four and giving the date at which that distinguished company visited Baalbek.

When my time came to visit Baalbek that tablet was no longer in its place on the wall of the temple. It was lying with a lot of other rubbish on the floor of the Arab castle near by. This is what happened. When Lord Allenby after his victory over the Turks and their German Allies was marching northward he passed Baalbek and placed an Australian garrison there, and it seems that these astonished troopers from the sheep ranges of Queensland and the streets of Brisbane, whose reputation is not exactly that of artists and whose constitutions were proof against most forms of atrocity, were nevertheless moved to take down that tablet from its place and assign it to a more appropriate setting on the rubbish heap, and I feel quite sure that when the Australians next went into battle, all the inhabitants of Olympus gave them every assistance in their power.

Before leaving this second temple I want particularly to put it on record that after a long controversy among scholars as to which of the gods this temple belonged to, the question has been settled to the satisfaction of everybody, and I rejoice to be able to record the decision that this beautiful temple, so noble in proportions and so exquisite in detail, was dedicated to no other than our good old friend Bacchus of the wine cups.

The temple of Bacchus is, as I have said, very much better preserved than the temple of Jupiter Baal, for the latter has been used as a quarry since the fall of the old religion at the end of the fourth century. Churches, mosques, castles and fortresses have been built from it and the crowning feature of that chaos of ruins consists in the six standing columns supporting a fragment of the entablature.

These columns are 66 feet high. The bases are 8 feet high and the capitals are 8 feet high. The shaft of each column is built in three sections and each shaft has a minimum diameter of $7\frac{1}{2}$ feet. The columns support an entablature 15 feet high. This entablature consists of three horizontal members; the architrave resting on the capitals, the frieze resting on the architrave and the cornice resting on the frieze and completing the entablature above. Each of these horizontal members consists of a single course of stone and each stone is 17 feet long and 5 feet high and weighs not less than 30 tons. Bases, shafts, capitals and entablature are all of white marble now turned to a rich warm brown and gold. Part of the wall of the plat-

form on which the temple stood is exposed below the bases of the columns and the big stones forming the wall of the unfinished rampart that enclosed the temple platform on the three exposed sides can be seen below.

Fallen capitals and fragments of architrave, frieze and cornice are lying about in heaps. From these one can examine in detail the sculpture that was carried around the four sides of the temple. Lions' heads at intervals on the cornice served as gargoyles to carry off the rain water from the roof.

I come now to the rampart wall that was carried around the northern, western and southern sides of the temple platform at a distance of 25 feet from the latter. That rampart was never finished. The course of stones in the southern range was intended to carry another course of the same dimensions and that was to carry a third course forming a huge ornamental cornice giving a finish to the top of the wall. Each of the stones in position is 15 feet high, 15 feet wide and 44 feet long and there are nine of them in this course. Two more courses of these stones would bring the top of the rampart wall up to the level of the platform wall and to the bases of the columns. The space between was to have been filled up with solid masonry to form a terrace running around the three sides of the temple and commanding a magnificent view on all sides.

On the western side of the rampart wall which is the end wall, the second course of big stones was already put in place. This course of stones is 195 feet long and it consists of three stones. Each of these stones is 15 feet high, 15 feet wide and 65 feet long. One more course of these stones would bring the wall up exactly to the level of the columns of the peristyle and on a level with the platform wall, which is 25 feet inside. Of special significance is the fact that the faces of these huge stones are not finished.

Let us go to the marble quarry three quarters of a mile away and see what we shall see. At the entrance to the quarry we find a stone, a block of marble of uniform quality and without flaw, 16 feet high, 16 feet wide and 69 feet long, and it weighs 1500 tons; but there are more and greater wonders to come.

I have not yet mentioned the joints between the big stones that were put in position in the rampart wall. These joints to my mind are even more remarkable than the stones themselves. To illustrate what I mean I here present a photograph taken where



At the entrance to the quarry we find a stone 16 feet high, 16 feet wide and 69 feet long and it weighs 1500 tons. (Page 132.)

FIG. 36.

two of the stones in the southern range come together. This course of stones was being cut away at the top so as to form a battered surface and on the stone at the right the batter was not finished. But I want to call attention to the joint between the two stones which may serve as an example of all the joints that were made in the rampart walls. What you see is a vertical V-shaped groove with polished sides at the place where the two stones are joined together and the joint, which is at the bottom of the V-shaped groove, is so fine that it is invisible and can be detected only with a strong magnifying glass. This close contact of the two stones extends from front to back and from top to bottom. I am using no exaggeration when I say that it is like the invisible joint in a polished mahogany table top. It is scarcely necessary for me to add that no mortar or filling of any kind was used in the masonry construction at Baalbek.

Four questions now present themselves as follows.

First. Who built the temples of Jupiter and Bacchus, and when?

Second. Why did they use such huge stones, the largest that have ever been used in construction?

Third. How did they move these stones?

Fourth. How and when were the temples destroyed?

Let me say at once that only the last of these questions admits of a definite answer. The answers to the others, if they are forthcoming at all, must be based on conjecture.

The first question, Who built the temple, and when? is answered by the inhabitants of the country in the following interesting way. They say it was built before the Flood by the giants who lived in those days; they affirm that no race of men since the Flood were big enough or powerful enough to accomplish such a task. They contend that since the Flood men do not live long enough to do so much work, and it must be admitted that there is something in that. In an interesting historical work written by the Grand Patriarch of the Maronites, the Christians who live in the Lebanon, there occurs this interesting and illuminating passage:

“Tradition states that Baalbek is the most ancient building in the world. Cain, the son of Adam, built it in the year 133 of the Creation in a fit of raving madness and with the help of the giants who were punished for their iniquities by the Flood.”

Such is the testimony of local scholarship. Our wiser Western scholarship is much less explicit and direct and much less final in its conclusions. We are to believe that there is not a stone visible at Baalbek that is older than the Roman Empire. That much may be positively asserted. Not a trace has been found of the original temple of Baal that must have stood on the same site. Whatever it was like it has entirely disappeared and was replaced by the temple whose ruins have excited astonishment and incredulity since they were made known to the world by a European traveler in the middle of the sixteenth century. It seems strange that such a place should have been forgotten for a thousand years, but it is still more strange that the Roman historians make no mention of the building of that wonderful temple.

The names of four of the Emperors have been associated with the Temple of Jupiter Baal. We are told that Trajan towards the end of the first century, while on a campaign in the East, visited Heliopolis and consulted the Oracle. There must therefore have been a temple in Trajan's time, but it is not known that it could have been the same that I have been trying to describe. The name of Antoninus Pius, who reigned fifty years later than Trajan, has been connected with the foundation of the Temple. That connection is based on a statement found in a history written in the seventh century, 500 years after the time of Antoninus Pius, who reigned from 138 to 161, a span of 23 years. There are two difficulties about accepting the statement that Antoninus built the Temple. It is hardly credible that a work of such magnitude was accomplished in the space of 23 years, and moreover the personal friend and biographer of Antoninus makes no mention of any such act on the part of his Imperial patron. The name of Septimius Severus who reigned at the end of the second century, has also been connected with the building of the Temple. This connection is based on the fact that there are some coins of Septimius that show the outline of a temple with the words Jupiter and Heliopolis. These coins have furnished ground for the idea that it was Septimius Severus who, during his reign, dedicated the temple of Jupiter to Baal, but the historian Dion Cassius, the friend and biographer of Septimius, makes no mention of the subject at all. The name of Caracalla, his son and successor, has also been connected by some writers with the finishing of the Temple, but that idea again is based on some coins of Caracalla.

The inscriptions found at the ruins do not help us, for there is not a single inscription that gives the name of the builder or that refers at all to the construction of the Temple. The fact remains that we do not know the date or the name of the builder. The style is that of the Roman Imperial Age and that is all we know of the origin of the greatest work that man has ever had the audacity to plan or the energy and skill to execute.

As to the second question, Why did they use such large stones? and why did they join these stones together with such incredible and unusual precision? The motives that men have for doing anything reduce themselves to a very few. The proximity of Egypt where the Romans had by this time grown accustomed to seeing in the work of their predecessors, the ancient Egyptians, massive masonry, huge blocks of stone and exceeding fine joints might have suggested to them a plan for surpassing the Egyptians in their own distinctive arts; but if that had been their chief incentive they would have chosen to beat the Egyptians on their own ground and would have achieved their triumph in Egypt rather than in Syria.

It was not for defense that they raised these stones, because the city wall enclosed the Acropolis and for defensive purposes they would have put the biggest stones in the city wall. When I saw that the surface of these huge monoliths remained unfinished it occurred to me that the builders had planned to cover the surface of the entire walls of the rampart with sculpture in relief, perhaps with scenes from mythology representing the inhabitants of Olympus or some similar scheme familiar enough in Greek and Roman art and architecture. It is obvious that for such a purpose the bigger each unit of construction the better, and it is also obvious that the finer the joints where they intersected the work of the sculptor, the better for his work and for the appearance of the finished surface.

Now for the third question. How did they move these stones and lift them into position, and how did they make such joints as those that we have seen? You already know the explanation of the native and I think there are reasons for dismissing the theory of giants before the Flood. The question is usually dismissed with the statement that the builders had legions of slaves whose normal energies and resources were, it seems, developed to an astonishing degree by the liberal application of portentous and magic whips, and whose unskilled labor miraculously transformed itself under the same treatment into the most refined and exquisite craftsman-



What you see is a vertical V shaped groove with polished sides at the place where the two stones come together and the joint is so fine that it is invisible to the eye. (Page 134.)

FIG. 37.

ship. That is an interesting theory, but there are objections to the theory of slaves and I find myself unable to entertain it. In the first place it has no historical basis at all. In the second place, Baalbek did not impress me as the work of slaves. It impressed me rather as the work of men who loved their toil and who gloried in the labor of their hands. It impressed me as the work of men who handled their tools with affection and who caressed the marble as they wrought it till it yielded to their touch and responded to their will for the sake of the love that they bore it. In other words, it all impressed me as the work of men who are as extinct today as the giants before the Flood.

What mechanical devices were used I do not know, but I think it will be agreed that the magicians who juggled with these stones, tossed them about, chucked them up on the top of walls and balanced them on the tops of columns and never thought of mentioning it at all, have furnished us with an interesting standard by which to measure our own performance. But when, in addition to that, they ranged those stones up together with the precision of science and with a cabinetmaker's joints, I confess that I find it a little bit provoking on their part, for it looks as if they were rubbing it in on us.

Now for the fourth and last question. How and when were the temples destroyed? We know that the Emperor Constantine after his conversion to Christianity ordered the temples of Baalbek to be closed some time during the first half of the fourth century, and at that time the great gates were shut on the worshipers of Jupiter and Bacchus to remain closed throughout the succeeding reign. Then to the Imperial throne at Constantinople came Julian, whose reasoned conviction that the preservation of human civilization and Greek culture required the restoration of the old worship was given public effect by his avowal of paganism coupled with toleration for all creeds. The temples of Baalbek were opened once more for public worship, but the respite was short, for two years after coming to the throne Julian was killed on a Persian battlefield (363) and with him died the last hope of paganism; but it remained for Theodosius, who reigned at the end of the fourth century, to celebrate the victory of Christianity by an edict ordering the destruction of the pagan temples throughout the world. The overthrow of Baalbek, then begun, was carried on for centuries by the Christians and by their successors, the Mohammedans. Already in the time of Theodosius a church was built in the great

court of the Temple of Jupiter with stones wrenched from its mountainous walls. Statues were burned to make lime or wantonly destroyed, and even the portrait busts of the gods carved on the ceiling of the peristyle of the Temple of Bacchus 65 feet in the clear overhead were systematically and laboriously defaced, as may be seen today where the great stones of that ceiling are still in place, but it was the Temple of Jupiter Baal that suffered most. Besides the Church of Theodosius many other Christian buildings were raised from its well hewn stones during the two and a quarter centuries through which the Christians remained in possession. When at last the Arabs broke through the Eastern defenses and drove the Romans out of Syria in the seventh century, they completed the destruction to convert the great platform of the Acropolis into a fortress and, throughout the succeeding centuries, to build mosques, castles and palaces from the temple masonry. Meantime to the outside world Baalbek was utterly forgotten for a thousand years till a European traveler at the middle of the sixteenth century made the ruins known to Europe and when Wood and Dawkins, two English architects, sixty years later published their drawings, they were able to convince the world that the story was not a myth.

I am not bold enough to attempt to decribe the emotions of a pilgrim in the presence of this ruined shrine. The effect conveyed by the eye to the astonished mind is matched in a wonderful way by the sensations of the ear, for the breeze that is always blowing strikes from these uplifted stones a clear melodious sound, sustained on a single chord and pitched in a minor key and when the gale sweeps down from the Lebanon these tall columns of sounding marble vibrate like the strings of an Æolian harp, flinging on the winds their soft lament.

On the south front of the standing columns the state of preservation is good, but the winds and the storms come from the north so that the northern exposure faces the weather and on that northern exposure where the rains, the snows and the hail drive against the unyielding stone and where the fingers of Æolus have swept the strings of this Olympian lyre, it shows worn and battered like some tall cliff that fronts a stormy sea.

While we are looking at this picture let us not miss its full message, lest what we have seen should make us feel too proud of Adam's breed. If this picture shows us on the one hand man, the architect, in action like a god, it also shows him up in action like

an insect or a worm. When the builders raised these columns they placed bronze dowels sunk in lead between the base and the foot of each column and some one in the course of time has cut away the stone at the foot of every column to extract the lead and bronze; and yet with only half a foot to stand on, each column continues to bear up its load and has weathered every storm and every earthquake. So long as these six columns stand as they stand today, serene above the warring nations—these valiant sentinels that have braved, age after age, the hostile elements and the violence and rapacity of man—so long will men bear witness that here a miracle was wrought in stone.

Now imagine nineteen of these columns in a row with the entablature spread above them and restore in your mind's eye the wall of the cella behind them, spread the roof over it all and raise the rampart of the big stones to the level of the bases of the columns to form a terrace and finish the rampart above with a gigantic sculptured cornice and imagine the face of the rampart wall around the three sides of the temple to be carved in figures of heroic size representing scences on Olympus, and you will see in your mind's eye a fraction of the vision of the architect who planned the Temple of Jupiter Baal.

When the sun rises above the Anti Lebanon and the splendour falls across the wreck of eighteen centuries you may conjure up, though dimly, some fragment of that vision; and if you are worthy, power may be given you to read between the lines of the dissolving marble some syllable of that builder's thought.

I remember a morning when I stood below the six majestic columns and watched the dawn come up. High up in the air, where the uplifted stones poured out their heart upon the breeze, in that soft booming sound that floated down the centuries, I fancied that I heard in that mystic chord the voice of the old divinity, the plaint of the great god Baal. It seemed to fill the firmament and pervade the vault above, and I should not have been at all surprised if I had heard Apollo's bowstring twang or seen Jove's thunderbolt descend.

But where I stood below, the ground was warm with human heart beats, for in that enchanted atmosphere I felt the stirring of men's thoughts and I felt the pressure of the faith of men. There was a mighty presence that enfolded me, and, wrapped about me like a vapor, the immortal spirit of a master mind. And as I looked upon his ruined workmanship, the tumbled columns and the stolen

stones rose up and took their appointed places and the void was filled once more with the vision as the builder saw it in the realization of his dream. But I had no standard to take the measure of the mind that worked that miracle and I had no instrument to gauge or arithmetic to estimate the thought that found its habitation in that mind. Yet as I traced the lines of his foundations and his plan unfolded itself acre upon acre around me, a plan that was so nearly finished and now so utterly undone, I felt that it was not so very far along the road that I was traveling to the heart of that builder's heart.

You cannot have failed to notice that wherever a bad building defaces the landscape, nature refuses to be reconciled to its presence, and that wherever there is a beautiful or a noble work of human hands, whether it be a cottage or a palace or a temple, nature seems to appropriate that object and in caressing accents to call it her own. How well this partiality of nature is brought home to us at Baalbek even the photographs confess; for the voice of nature seems to be saying: This temple is my very own, it is planned after my own fashion, it rhymes with my rivers and my waterfalls, it is made like my mountains, it is one with my thundercloud.



A fragment of a moulding from the Temple of Bacchus, Baalbek.

FIG. 38.

EXPLORATIONS AT THE MOUTH OF THE AMAZON

OF the whole drainage of the Amazon, the great island of Marajo, lying in its mouth like an egg in the mouth of an elongated serpent, is of most interest to the archæologist. The ancient inhabitants of this one island achieved a higher civilization as indicated by the development of their arts than that of any other tribes in South America east of the Andes Mountains.

Marajo, nowhere twenty feet above the level of the sea, lying directly under the equator, possesses a continuously hot climate which is made livable by the presence of open plains and constant trade winds. During the rainy season from January to June, the greater part of the island becomes an enormous lake with occasional undulations of land rising a few feet above the general level.

The island is nearly half the size of the State of Pennsylvania and is divided into two almost equal parts of forest and savannah. The eastern half, a remnant of the original land mass, is a grass covered plain, while the western or upstream side, partially of alluvial deposit, is covered with a rank forest growth, the home of the rubber tree.

The open plains today constitute a great grazing ground where cattle abound, some of the fazendas or ranches having as many as fifty thousand head. The cattle suffer from two extremes of drought and excess of moisture. Every year many are drowned in the lowlands, others stand for three or four months knee deep in water, as they never lie down in water more than a foot deep. Many calves are killed by alligators. Once in six or seven years, the dry season is prolonged and the cattle die of starvation and thirst. In 1915, more than five thousand died on one ranch alone. In such times as these, the rivers and lakes dry up and the weakened cattle attempting to wade through the mud of the banks, stick fast and are eaten alive by alligators. Having once witnessed such a performance, I never afterwards hesitated to shoot all the alligators encountered.

As the lakes contract during the dry season the alligators are forced into narrow quarters where hundreds of them may be seen in a pool a quarter of a mile long and a few yards wide. The vaqueiros, or cowboys, have great sport killing them. The boys work in trios for the sake of safety. They walk into the lake, get behind a big alligator and chase him toward the shore; one boy throws his lasso



A DOUBLE BURIAL REPRESENTING THE TWO TYPES,
CREMATED REMAINS IN THE SMALL URN AND ENTIRE
BODY IN THE LARGER ONE. COMOTINS MOUND.
HEIGHT, 55½ INCHES.

over its head and as it turns to catch him with its great mouth wide open, another lasso is thrown over from the other side and the alligator is checked up and driven to the edge of the water where the third boy strikes it across the back of the neck with his machette and severs its spinal cord. If, however, the second boy with his lasso should fail and the first becomes endangered the third catches the alligator in the side of its jaw with the end of a long pike pole and holds it until the second lasso is secure. It is very exciting sport and fraught with sufficient danger to satisfy even the wildest vaqueiro. Occasionally a man is caught but help is always at hand.

One Saturday afternoon in December, 1915, I saw more than two hundred alligators killed by this method on the fazenda of Dr. Miranda, and I afterwards learned that some three hundred were killed at the same lake the next Saturday.

In former times horses thrived so well on the island that they took possession of the grazing grounds to such an extent that about 1840 the ranchers killed them by thousands for their hides. At present a strange disease is attacking the horses, and it is with difficulty that the ranchers can keep enough to use in herding cattle. In fact, during the rainy season, the ox has turned the table on the horse to such an extent that I have witnessed cowboys mounted on oxen herding horses.

In the very center of the island is a shallow lake called Arary, fifteen miles long and three miles wide, having as an outlet to the Amazon a river by the same name, which is navigable for sailboats and gasoline launches. On the east side, small streams flow into the sea, the tides bring salt water far up into the land, so that the cattle are compelled to drink brackish water except during the rainy season. Not far from the lake rises the Anajas River, which flows to the west and on the way receives the Comotins and Moçoes. On the margins of the lake and along the banks of these rivers are numerous artificial mounds of earth built up to a height, in extreme cases, of fifteen or twenty feet and covering an area of two or three acres. The first of the mounds to attract attention and to reveal its artificial origin was one on the island of Pacoval in Lake Arary. The action of the waves destroyed one side of the mound, exposing fragments of pottery and stratified ashes, thus proving that it had been erected by man.

All the mounds are oval or elliptical in shape, never in geometric or animal forms. They often have broad, flat tops and are

constantly used as sites for houses, corrals, and orchards. In this way so many of them have been destroyed that few are left worth investigating. Many have been destroyed by men digging for large burial urns which they use for the storage of water or farinha. The smaller pots are thrown aside along with the large ones they break during the excavations. I found a perfect one three feet high set at the corner of a house to catch rainwater; the falling of the rain and the rubbing of the cattle had completely obliterated the paint and designs on the pot.

Owners of the land, for some unexplained reason, are very loath to have the mounds excavated. I had great difficulty in getting



Loaded canoe and burial mound on the Comotins.

FIG. 39.

permission. Dr. Vincente Miranda, owner of a large ranch, said that he did not know of any mounds on his land, but I was at liberty to excavate if I could find any. We located several of medium size and excavated four without finding a solitary thing of value. They had been used as house sites only, as was indicated by the presence of ashes and fragments of pottery.

While we found no burials or anything else of value from an archæological standpoint, we made a most interesting and valuable discovery in connection with the changes of level at the mouth of the Amazon. Some geologists asserted that the island was slowly rising, as was indicated by the steep bluffs along the sea. The "oldest inhabitants" are quite certain that the island has been

slowly sinking within recent years, because, they say, there is very much less high land in the interior than there was in the earlier days.

Trees of large size are often found growing on and about the mounds. The mark of the high water is clearly indicated on their trunks. The upper line of horizontally stratified ashes in the mounds shows the height of the highest floods during the time when the mounds were being built up. We have here, then, the markings on the trees and the markings in the mounds for a comparison. We found upon a careful examination that the lines on the trees practically coincide with the highest lines in the mounds, proving that the island has not noticeably changed level since these mounds were erected by the ancient people in prehistoric times.

After two weeks of fruitless digging with fourteen men, we were finally rewarded by finding a mound at Forteleza about ten feet high, covering more than an acre of ground, which had been built up artificially and then used as a village site (Fig. 40). Apparently the people had cremated the remains of their dead and buried the ashes in small urns in the floor of their houses. These urns were beautifully decorated with incised lines or paint or both (Fig. 41). Many plates, small bowls, cooking pots, and seats were found buried with these urns.

About twenty miles west of this group Mrs. Magno gave permission to excavate a mound twenty feet high, three hundred feet long, and seventy-five feet wide, located on the bank of the Comotins River. This great mound had been built up artificially to near its present height and had been occupied by a village whose people deposited their refuse just outside of their doors and buried their dead in the mound in great urns three feet high, in which the bodies had been placed in a sitting posture. These urns are beautifully decorated with incised designs in geometric and human forms. It would appear that a part of the dead were cremated and the ashes buried in small urns of beautiful form and design. Later, other people occupied the mound, who also buried their dead seated in great urns of beautiful form and design but of entirely different manufacture from those of the earlier people. They, too, cremated a part of their dead and buried the ashes in small urns of similar form and design to the large ones. These large urns were apparently not manufactured primarily for burial purposes but, no doubt, were first used for the storage of water. This we infer from the

fact that we often found the body of an urn, with an incomplete or broken neck, used for burial.

Plate V shows one of two double burials found in which both cremation and inhumation were represented. The mouths of the urns were always covered either with a beautifully painted shallow bowl as shown in this photograph, or with a great flat plate inverted over the mouth and often extending to the edge of the lip. The lips were sometimes so broad and flat that it was necessary to support them with caryatid figures in low relief, standing on the shoulders of the urn and resting against its neck. These figures were balanced, two on each side, or four equidistant around the neck.

Whatever ornaments were originally worn and buried with the dead had entirely disappeared. Nothing whatever was found on the inside of the burial urns except the so-called "tangas" or fig leaves supposed to have been worn by the women. Many fragments of these tangas turned up in the general digging, but only perfect ones were found inside of the urns, where they always occurred at the very bottom. The tangas were always well made, hard burned, highly polished, and either in bright red monochrome or painted designs. No two have been found alike. The slight difference in form and in the flare of the corners and in the designs would seem to indicate that they had been made to order and to fit the wearer.

When the urn was placed in the grave, the bottom of the hole was dug to fit it, so that all of the smaller pieces of pottery placed with the dead were deposited at the side of the neck on the shoulder of the urn. In the general digging, the most important of the smaller objects recovered resembled in size and form the ancient Roman lamps, having an open bowl and a short stem with a hole for the wick. They may have been lamps, or, as a medical doctor suggested, they may have been used as medicinal cups for the sick; each observer is entitled to his guess.

One of the first questions asked in reference to these remains is as to their age. Unfortunately, there is no possible criterion for fixing the exact age of any archaeological remains in the New World. If articles of European manufacture are discovered in the remains, then the age is clearly fixed as Post-Columbian. On the other hand, if no evidence of European contact is revealed, we can only say that the finds are prehistoric, which may mean five hundred or a thousand years before the discovery. For the culture of the



Mr. Bertino Miranda at the foot of mound excavated at Forteleza.

FIG. 40.

island of Marajo, there is nothing available for fixing even a relative age. No European articles were found in any of the mounds excavated; so we are justified in claiming for them an age of more than four hundred years, the time which has elapsed since the discovery of the Amazon.

There are other evidences also which would allow them a considerable or even a great age. Although the bodies had been placed in covered urns and buried in the mounds high above the flood plain, the skeletons had entirely disintegrated—even the enamel of the teeth had disappeared. In the refuse heaps where bones of animals are cast away with other kitchen remnants, no evidence of bones or shells was found. This would appear to argue for a rather great age. I have explored prehistoric mounds in the Mississippi delta where the conditions of soil and rainfall are very much

the same as they are here on the Amazon. In the Mississippi I found human bones well preserved where they had been buried without protection, in direct contact with the earth. Animal bones were also found, well preserved and in very great abundance. It is true, however, that there is a greater rainfall at the mouth of the Amazon and, besides, we know nothing about the chemical composition of the soil, which might affect the preservation of the bones.

One can easily understand why so few articles were found with the burials in the mounds of Marajo. There is no stone in the Amazon valley suitable for the manufacture of implements; hence, the very few found must have come from a long distance. Because of this lack of stone, the implements must have been made of wood, bone, and shell. All of these have entirely disappeared and left nothing but pottery behind.

I have said the bodies had been buried intact in a sitting position inside of these great urns, and now I must explain how we were able to determine that fact. Many of the urns were broken from the weight of the superposed earth, and when excavating it was convenient to remove these fragments before disturbing the earth in the interior. This method allowed us to cut down in cross sections and expose the outline of the bodies in profile. As the bones decomposed, silted earth took their places; so, by carefully cutting away the earth, we were able to trace out all the bones of the body. In many cases, in the early stages of decomposition, the head had fallen forward from the trunk and remained face up on the bottom of the urn. The body, no doubt, had been wrapped in cloth or bark and then deposited in the urn after it had been placed in a hole dug in the mound. The neck of the urn was sufficiently large to admit the body in this form. In one of the largest of the urns two adult bodies had been seated side by side.

Many times the grave digger encountered an earlier burial, but instead of selecting another site, he continued and broke away the upper part of the urn and seated his own on the top of the earlier burial.

So far, we have been unable to find conclusive evidence that the people were clothed or manufactured cloth of any kind. In the North American mounds, cloth marked pottery was often found, but here nothing of the kind has been discovered. In all our excavating, only one spindlewhorl, or object that might have been used for that purpose, was discovered. If the people were acquainted



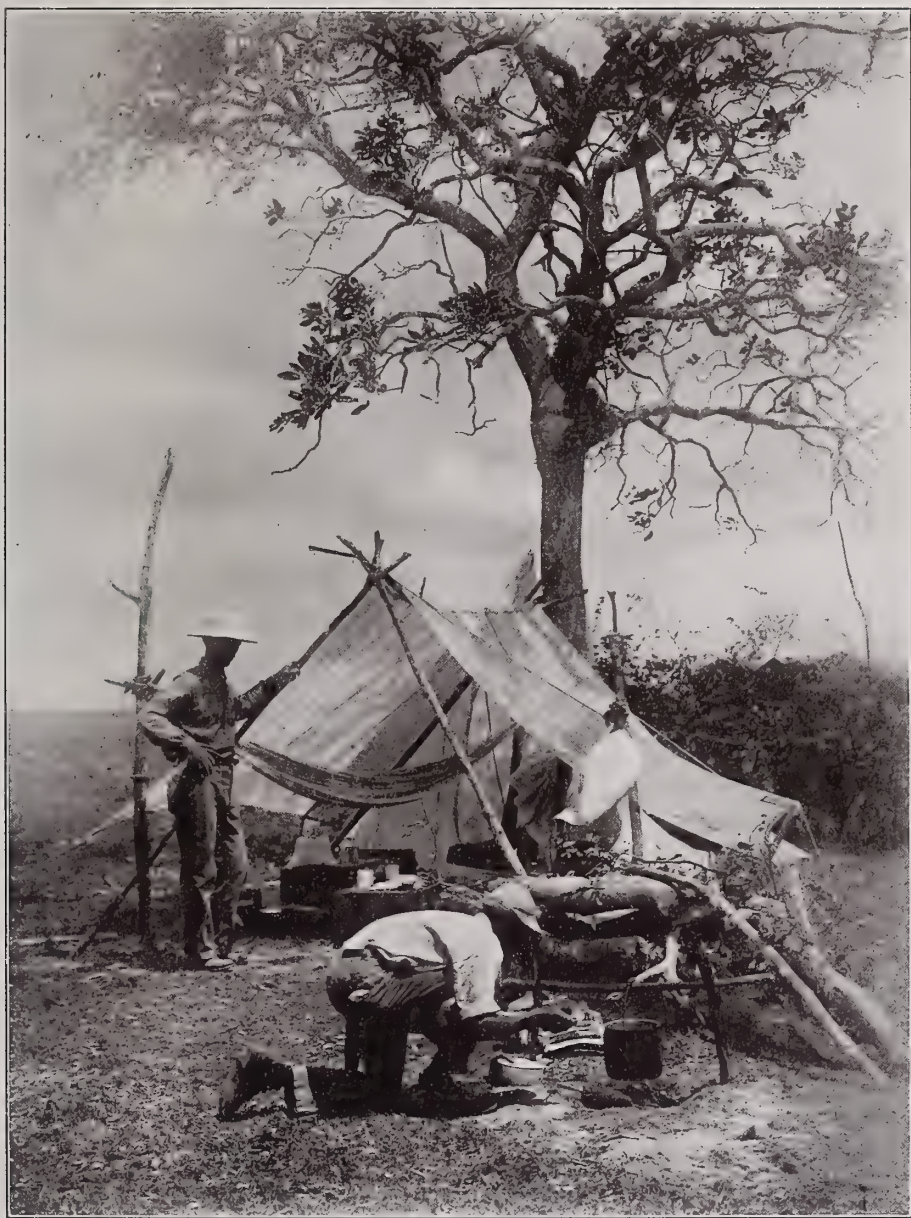
Urn with incised designs used for the burial of cremated remains.
Height, 15 inches.
FIG. 41.

with spinning, it is rather strange that more spindlewhorls or other evidence has not been found. The people may have dressed as some of the modern natives do today, in bark cloth, but even this is doubtful. If the so-called tangas were used as fig leaves it is highly improbable that any clothing was worn over them, as they are always well made, beautifully decorated and worn to be admired. If the women wore tangas, the men must also have worn some protection, which was more than likely made of bark.

From all the indications and the information at present obtainable, it would appear that the high state of culture here represented is indigenous to this one island. It is not directly related to any other known culture; but it is true that little archaeological work has been done along the coast of Brazil north and south of Marajo, and evidence may yet be found of some contact. The art represented is so free and bold, as represented in Plate V, that it would seem to have sprung into being readymade. There is no evidence in the material found of a development from a lower culture; but, again, this may be due to the fact that little systematic work has been done in the island.

Life on the island of Marajo during the dry season is very delightful. There are no mosquitoes nor troublesome insects and the constant trade winds produce continued evaporation, so that one never feels or appreciates the continued heat. By observing the photograph in Fig. 42, it will be noticed that to prevent our camp from blowing away, it was necessary to anchor it to a tree; and it will also be noticed that my boy cook was compelled to dig a deep hole to preserve his fire. This observation may be of service to campers who have had difficulty in building and keeping a fire in the wind.

We were encamped about a hundred yards from a small stream. At daybreak when I went for my bath, I took along with me my Remington repeating shotgun and every morning, without exception, before I had finished my bath, I had brought down from one to six ducks as they were flying up the stream. Thus, without hunting, I provided all the meat we used in camp. I should make one reservation, however. We practically lived on rice and duck, but ants by the millions got into the rice. My boy, accustomed to ants, did not think it necessary to remove them, and cooked ants, rice, and duck together. In the process of cooking, the ants would rise to the surface with the oil of the duck. One day, when



Our camp on Marajo.
FIG. 42.

ants seemed more plentiful than common, I suggested to the boy his Portuguese proverb that eating ants was good for the eyesight and that if he were to take his share of the meal from the top, he might be able to observe the ants next time. With a broad grin, he played the sport and ate the ants; and it had the desired effect. But do not waste sympathy on the boy, he got only a few more than I did or than we were accustomed to have every day. My only objection to them is their acid taste—they are too sour and should be eaten with sugar, but you can't put sugar on duck.



Burial urn from Ilha do Para. Height, 17 inches.

FIG. 43.

We had many visitors at our camp—cowboys, ranch owners, hunters, and troops of mendicants. A friend from the city tried to induce me to spend a day with him hunting deer, but I was too busy and he went with a cowboy, returning at four o'clock with ten deer. There are few opportunities for the cowboys on the great fazendas to attend religious services; so groups of a half dozen men travel about from fazenda to fazenda celebrating mass. The mass was all right but the music was the most horrible I have ever heard. As I kept no money in camp for contributions, all I could do was to soften the singers' voices with some good wine I kept on hand for distinguished visitors.

My own work in the excavations was more laborious than it otherwise would have been, because all my workmen were inexperienced and it was necessary for me to remove all the objects from the earth with my own hands. This fact, however, may be responsible for the observations that some archæologists have



Burial urn in form of a man. Height, $29\frac{1}{2}$ inches.
FIG. 44.

made upon looking over the collection, that is, that there are few marks of implements upon the specimens. Although we were working in the open, under a direct sun, in the dry season, and I never worked harder in my life at physical labor, I was in perfect health during the whole time.

The next three months, spent in our sailboat exploring the islands and excavating, was the most disagreeable of my experiences. Our excavations were in the depths of the forest where there was no breeze blowing. Rain fell every day; our clothes and shoes were covered with mold at night; rain filled our excavation trenches and interfered with our digging. We were soaked from outside in and from inside out and covered with mud from head to foot. Ants with various kinds of stings and bites and different dilutions of formic acid; ticks, jiggers, red bugs, and brown bugs were plentiful; but most troublesome of all, day time and night, were the mosquitoes. At night we could escape them in our nets. During the day I worked with a head net and gloves and hired a boy with a brush to keep the mosquitoes off my back; but he preferred, instead of keeping them off, to allow them to bite and then kill them to see the blood splash. But there was plenty of water for washing clothes and for bathing, and one forgets these little discomforts when he sees the unique results of his labors.

When our excavations were completed, at the end of the dry season, it was necessary for us to build a house to protect our collections until the middle of the rainy season—some four months later—when it would be possible to reach the place by canoe. There are no roads on the island, consequently, everything from the interior must be packed on oxback to the nearest navigable place on the river, where it is carried by canoe to a stopping station of one of the Para steamers. As it was impossible to carry such large packing cases as used for our burial urns, we were compelled to delay the transportation until the wet season.

In the meantime, we explored a number of islands along the river above Marajo and on the mainland north of the river.

On the Ilha dos Puercos, Island of the Pigs, there are numerous village sites; but, apparently, the people removed their dead to a small island nearby called Ilha do Para. On this small island we were unable to find evidence of occupation or village sites, but near the center of the island the land rises to about three feet above the level of high waters; and here we found the ground literally covered with burial urns of peculiar form, Fig. 43. These burial jars had been placed side by side on the surface of the ground in groups of from two to a dozen, without any protection or covering whatever. The falling limbs of trees and growing roots had disturbed and broken nearly all of them, yet



Our pack train on the way to camp. We later sailed over this same trail, Fig. 47.
FIG. 45.



Hauling our collections in large canoes hitched to the tails of oxen.
FIG. 46.

it was possible to obtain the fragments because they had not been scattered.

The urns were made in the form of four footed beasts having large flat bodies, short tails, big legs, and flat feet with four or five toes. The head was in the form of some animal or man. The body of the pot was never more than two feet long. The hole in the top for the reception of the human bones was covered with a flat plate apparently made for the purpose. The bones must have been disarticulated before they were placed in the urn. No implements of any kind were found inside the urns or about these peculiar burial places. The bones were partially preserved.

On the mainland, some two hundred miles north of the Amazon, burial urns in the form of a seated man were found in a cave (Fig. 44). The head, with the face very well modeled, served as a cover. In the region round about, many village sites were excavated and interesting fragments of pottery were found. These urns in the form of a man were too small for the burial of bones. Apparently, they were used as receptacles for the cremated remains.

These burials appear to belong to a much later period, because in some of the urns of animal form, as described above, and found on the mainland and those of human form, well preserved shell beads were found; and in one, the largest of those of human form, were found a few large glass beads of European manufacture. The fact that these glass beads were found in but one of the great number of burials and that in the most important one, would seem to indicate that these remains belong to the very first contact with Europeans.

One other important group of remains was investigated near Santarem, a small town on the Amazon, at the mouth of the Tapajós River, some four hundred miles from the sea. One of the natives had a few fragments of pottery which he said came from the "black earth" on the top of the mountains, about ten miles back from the river. Upon investigation, this black earth, as I had supposed, marked the site of an ancient Indian village. The location was on the edge of a high plateau overlooking the Amazon. A number of such sites were located by one of two methods; either by finding the black earth, or by first locating a spring and then, looking for the village site on the plateau top nearby. The black earth marking these sites was found to be from one to two feet deep and covered in some cases, as much as ten acres of surface. No burials were

found and nothing but broken pieces of pottery. The culture represented here, judging from the fragments of pottery, is entirely distinct from that of Marajo.

While investigating the archæological remains near Santarem, we made another interesting discovery. The man who owns the great body of land on which these ancient remains were found, is an American; one of the four remaining representatives of a colony formed at Santarem at the close of our Civil War. The men are well-to-do and are a good example of what energetic whites can accomplish even in the tropics. They all have Brazilian wives and numerous Portuguese-speaking children. When Brazil became a republic in 1878 and all foreigners were required to make declarations of their intentions, all of this colony, with one exception, decided to retain their American citizenship. Two of these men have never been back to the United States, but they still are proud to retain their citizenship and promise themselves from year to year a final visit to the old home. Naturally, Mrs. Farabee and I were well received by these men and their families and it is a pleasure to acknowledge our great indebtedness to them.

By the middle of May there was sufficient water to float a canoe all over the interior of the island of Marajo. We hired a sailboat with an eighty foot mast, loaded her with empty packing cases of various sizes, many of them three feet square, to accommodate the large burial urns; and went to see what had happened to our collections, to pack and to ship them to New York.

The house we had built we found intact and the collections undisturbed; but a great snake had taken possession under the floor and scorpions had mingled themselves with broadwinged roaches and occupied the dry spaces among the pots, making packing somewhat dangerous. It was not safe to put one's hand inside of a jar without first exploring it with a club.

When we excavated at Forteleza, I was able to obtain boxes and pack the collection before leaving our camp. It was now only necessary to load the boxes in a canoe and sail away with our oxen. We were quite surprised, however, when we attempted to remove the first large box. It was standing on top of the others in apparent perfect condition, but as soon as we attempted to move it, it fell to pieces and the contents scattered on the ground. During our absence, the termites had eaten away the interior of the wood, thus allowing the box to collapse. They had also eaten all of the labels



Sailing through the grass with water six feet deep on Marajo.

FIG. 47.

and notes packed with the collections; so it was necessary to return with other boxes and repack the whole collection.

Form Para to the island of Marajo, fifteen miles across the bay, we traveled in a large sailing boat which tossed about frightfully on the rough sea. The natives are expert in taking advantage of current, tide and wind. Para is located seventy-five miles up the river from the sea. We would drift down with the tide at night and in the morning, return with the returning tide and by means of the constant winds, tack across the bay to the mouth of the Arary River. The eastern side of the island is a great plain, the trade winds are unobstructed, hence it is possible to sail up the small rivers to the very center of the island. On account of the short turns in the narrow rivers, great care is required in tacking around the corners. It is not an uncommon thing to run aground, when all hands turn to with poles to push the boat off.

During the wet season, the grass grows rapidly and covers the water so that one often finds himself sailing through a great

meadow with no water in sight in any direction, although it is six or eight feet deep under his boat. Although our boat was of shallow draught, we were unable to cross the low divide between the Arary and the Comotins where our collections were stored and we had to secure oxen to haul our canoe back and forth from the camp to the boat. One naturally asks why we did not paddle our canoe. The answer to this question at the same time answers the other more perplexing one of why the oxen are hitched by their tails. As the grass grows in the warm weather, it mats together so closely that it is next to impossible to push a canoe through it and it becomes necessary to haul it with an ox; but why not use two oxen and a yoke?

The ox is broken to ride because he is much safer than a horse in swampy lands. His feet spread out as they go down in the bog and fold up as they are pulled out. Therefore, he never sticks fast and falls down. He is ungainly and impossible on the gallop but is usually a better walker than a horse. He is badly affected by the direct heat of the sun, so we often rode across the savannahs in the moonlight. He has a remarkable ability in following the way with which he was acquainted during the dry season but which now is covered with three or four feet of water. He zigzags about as he goes along unguided by the rider and always emerges at the desired place. If one attempts to ride with a tight rein, stiff legs, and straight back, he is soon worn out; but if he rides as loosely as a stuffed dummy and surrenders himself to his animal, he soon enjoys it.

The ox's head is so low that the rider feels in danger of toppling over—there is no mane to clutch. One other sensation I was never able to completely overcome. When the ox steps into a soft bog with one front foot, his shoulders are so loosely joined that he appears to cast the leg adrift and go on without it. The explanation is that the rider misses the violent muscular efforts he has been accustomed to feel when riding a horse. The yoke is not used because the boy wants to ride and because a single ox breaks a path in the long grass through which the canoe is pulled with little effort. Besides it is so easy to tie the tail and a lot of trouble to use a yoke.

We left our sailboat standing in the deep grass, loaded our large canoe with empty packing cases, threw a clove hitch over the tails of our oxen and crossed the divide to our old camp on the Comotins, a long day's journey away. I remained behind alone to pack while the boys returned to the boat for another load of boxes. And so



On Dr. Vicente Miranda's Fazenda.
FIG. 48.

on; a trip a day, loaded one way and empty the other, until all the collection was packed, transported, and stored aboard our sailing boat.

On my way out I called to settle for the services of the men and the oxen. The owner of the fazenda said, "You have had four men ten days, have used twenty-two oxen and pulled out six tails, your bill is twenty-seven dollars and a half." By pulling out the tails, the owner meant that the oxen by some sudden jerk had dislocated some of the bones of the tail. They would recover in six months.

Everything on the island is hauled in this fashion—firewood, fences, canoes and even all the timbers for houses. An ox can pull about half as much in this way as he could with a yoke. It is a heartless lazy man's method. After one has been hauled in this fashion for a few weeks and has pulled out a few tails, more or less, he is never known to order oxtail soup again. Don't try it.

The expedition is indebted for assistance to the Government Officials generally; to Dr. Vincente Miranda, whose home on Marajo was our rendezvous, for permission to excavate at Forteleza; to Bertino Miranda for laborers in the field; to Mrs. Elvira Magno y Silva for permission to excavate at Comotins; to the scientific staff of the Goeldi Museum for advice and helpful cooperation and to the American Consul, Hon. George H. Pickerell, whose office was our headquarters for three years.

W. C. F.

TLINGIT WOMAN'S ROOT BASKET

BEFORE me stands an old American Indian basket, it is a production of my own people. As I look and study its dilapidated form I feel as if it recognizes me, and my thoughts flash across thousands of miles, back to the land where we both belong, and then back to the age stained old piece before me. It seems to me that I have seen this before. Is not this the old "Rest-in-shadow"? It may be that I only heard of it when I was yet too young to remember important things.

The basket was brought in to me, to write and tell about it, and after I dipped my pen in the ink I held it and wondered: "How am I to begin?" Now, for once I realize that I am handicapped in not knowing enough about one of the important things made by my own people.

Basketry is the woman's handiwork, and at one time a man felt rather clumsy when he started to talk about the dainty composition, but, since the white people came to our land, most of us have learned that to know about many other things beside the aggressive arts is necessary. Hence, a man with modern education often times tries to make up with the woman for his former inconsiderate conduct, by consulting her on the methods of basket making, but a true Tlingit woman, like a disturbed clam, still has her lips closed tight upon her feminine thoughts in the presence of him whose idea alone had demanded all praises, and usually with a smile tells him to mind his own affairs. Hence, the description of this article shall be confined within the limits of a Tlingit man's knowledge of the art, and, aside from the occasional use of native terms, no attempt is made to offer in detail the methods of weaving the basket.

From the beginning of its history the woman's root basket had always held its own among the most important things invented for use in the economic life of the Tlingit people, and if anything deserved praise the art of basketry was entitled to at least some credit. But it was the former majestic attitude of the man that repelled in the woman her desire for consultation with her lord whose favor she had always sought. The basket was indeed a useful thing with him, but little did it occur to his selfish mind that it required great skill to produce it; to him the work was the result of a mere woman's mind. Therefore, in spite of all disappointments the forlorn woman



YAKUTAT TLINGIT TRADE BASKET CALLED REST-IN-SHADOW.

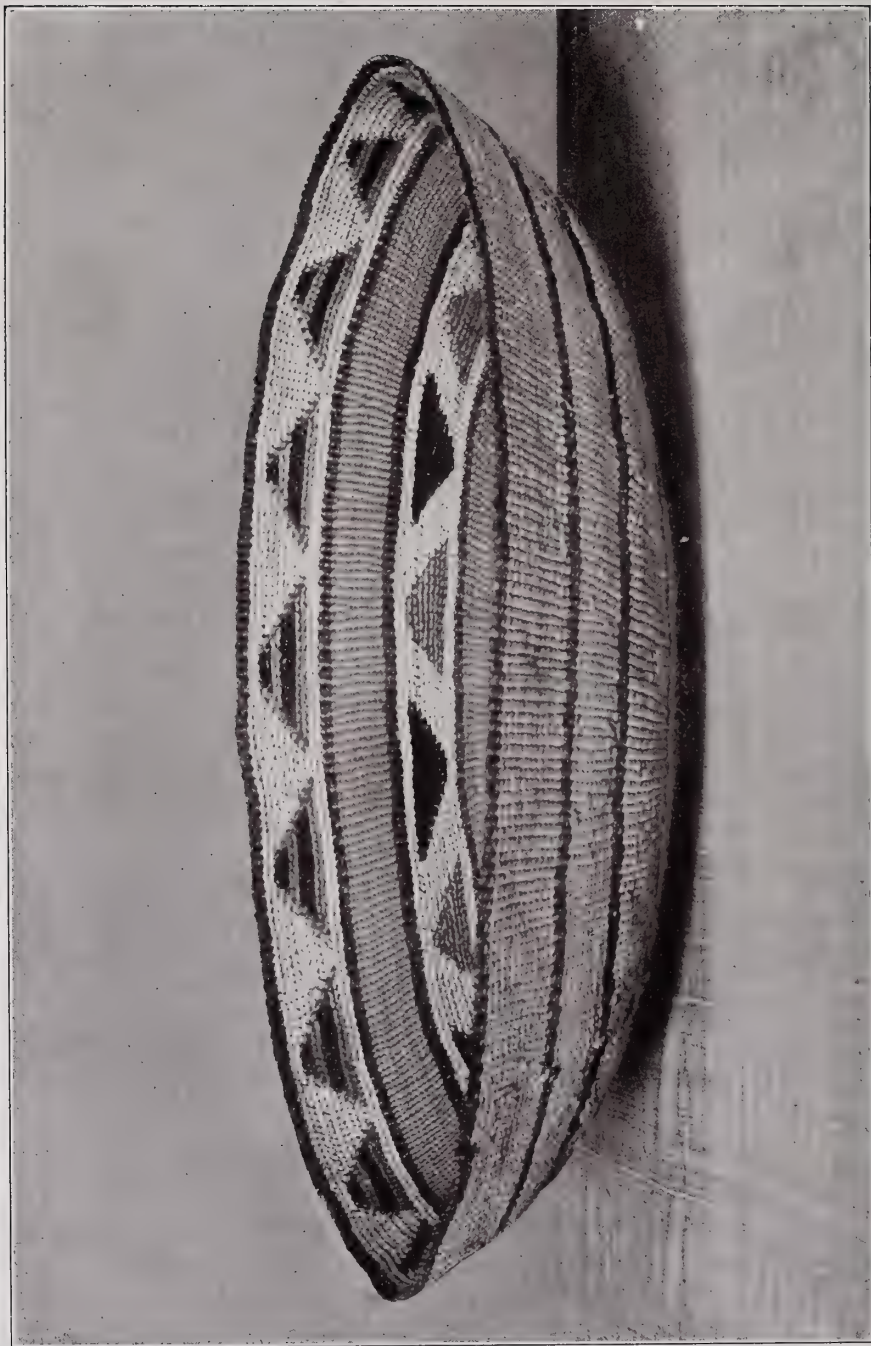
continued to perform quietly all that her skill could produce. Thus, the knowledge of the art was conveyed to our time only by the unerring patience and faithfulness of the old time Tlingit woman.

The life of the white man came over the Tlingit people like a great thunder storm, and in the wake of this the man found that all his old occupations in which he had excelled had been destroyed; thus all hopes within him began to disappear; the pride of excellence remained, however, with the woman: which is a good test that she easily surpassed the woman of the other race in the work she was allowed to continue. An invader may satisfy himself in saying that the native customs and habits have about disappeared, but could the lid of the true Tlingit woman's mind be thrown wide open there would be seen the mystic veneration of her art still alive and active.

Geographic Divisions.—We have learned that after the Tlingit speaking people entered the land which is now known as South-eastern Alaska, they began to scatter. Only one group, comprised of close relations, made its settlement at the first landing, which they had referred to as Sā-niya "West-side" (of the Portland Canal). Most of the people continued their search westward for a more favorable place to call a home, and as the migration proceeded up along the coast, various groups found their way to some island, river, or inlet.

Years passed, but a man of Sāniya-quant' "Westside-people" lives to hear, from time to time, of his kin who had wandered elsewhere, only by a new geographical name; the names which, from that day to this, have clung to them like scars, never to be erased.

The divisions which met with fortune (and each eventually became an independent body) are: Tōn-yātug'-quant on the land named Tōn "Sealion" which is now known as Rivillagigedo Island; Hēnya-quant' "Waterside-people" (i. e. the ocean side of the Prince of Wales Island); Shtug-hin-quant' (Stikine people), Kuyou-quant', on the Kuiu island; Kēkā-quant' on the land they named Kēkā "Opening of day" (dawn) which is now known as Kupreanof island; Sheetika-quant' "Shee-outland people" (Sitka people) on the land they named Shee, which is now known as Baranoff island; Whonah-qa'wu "Northwind side-inhabitant" on the northern shore of the land which is now known as Chichagof island; Whoozdāh-quant' (modification of Whooz-noowu'-quant) on the land they named Whooz-noowu' "Grizzly-bear-fort" which is now known as Admiralty island; Auku-quant' "Little-lake-people" (Auke Bay);



The táhl' "flatten", used in screening berries.
FIG. 49.

Jihlkot'-quan' found their way into the river named Jihlkot' (modification of Chähl-haut' "cached-salmon" which is Anglicized as Chilkat); Hlähäyik-quan found their way into the bay they named Hlähä-yik' (cf. Hlähä, Tsimshian term for, on high or highest), which became better known as Yakutat Bay. There are few more geographical occupations, and the foregoing list includes only groups among which the art of basketry developed.

It was not in a few years time that all these divisions were settled; many generations came and went. With the old passed to the Great Beyond some things of which we hear only in the legends, and in lieu of these the succeeding ones brought with them new things. Most of these served until something else appeared with more means of advantage, but it required the European civilization to put the woman's root basket out of its long service.

Through all the years of unsettled life, arriving in one place, and leaving again for another, the women never lost sight of their coils of roots, and wherever a settlement was made a woman twined them into some useful form. Thus, they continued to make the baskets throughout the whole region. The same material and method in construction were employed, but with the progress of time, like other useful objects, each locality made a basket to serve its own purposes.

Diversity of Forms.—The Great Raven, during his journey, transformed the land on which we live in different places. He made one place hard, while he smoothed out an easy way at another; he provided plenty here and less there. Thus, the ways of doing things are according to man's environment. Yet with all these differences of habits he was wont never to forget his tradition. He may be of Jihlkot'-quan' or of Hlähäyik-quan'; he is, nevertheless, a Tlingit. His geographic position never caused his tradition, language and customs to be different from those of his kin who had only settled on their own choice of land. But when it comes to providing accommodations for domestic life, what one uses with success in one's own locality does not always meet with the same success in another. Hence, geography had much to do with the old time Tlingit enterprises.

In his own locality each man invented things, or modified things that had been invented in another, to suit his own purpose, and an object regarded for its utility at one place was sometimes regarded for its purchasing power at another. Thus, the use of basketry was either industrial or ideal.

On the one hand the form in basketry was decided at the outset, not by the desire to create something artistic, but to produce a useful receptacle, while on the other, the creation was done with a kind of æsthetic feeling, thus, its usefulness was often sacrificed to the desire to produce something beautiful. For example, there were the Jihlkot'-quan' and the Hlähäyik'-quan', the two geographical groups with whom the making of baskets offered a distinction.

With the Jihlkot'-quan' the basket was a useful utensil: therefore its durability had remained foremost in the mind of the maker, and only leisure thoughts were spared to its artistic quality; the forms were limited to the most useful receptacles. The excellencies of weave and symmetry, however, were not entirely absent among the women—a fine basket went in company with the personal name of its maker.

With the Hlähäyik'-quan' the industry in basketry has ever been of commercial importance, hence, the highest virtue of the woman was her ability to produce a beautiful basket, and it was always on the artistic quality of the production depended the efficiency in exchange. The piece for common use then was the despair of the expert weaver; it was bereft of ornament. Thus, the Hlähäyik'-quan' women were foremost in the native art, and had the recent popularity of basketry but come in the days of native wealth they would have become also controllers of important means of trade.

Although no local difference was recognized in the construction of Tlingit basketry, a proud owner was often heard to say: "It is a Hlähäyik'-quan' production," indicating the people of the locality where basketry was regarded for art's sake.

Basket Maker.—It can be seen in most of the examples illustrated that in producing her effects the basket maker must have been well equipped for her work even before the first twist was attempted. The finest weaves show that every detail in the production was placed correctly during the progress of the twining, and when the work was finished there was no way to remedy defects, except by the possibility of raveling.

It was instinct which led the basket maker to search the forests and dig into the earth for the khät. She seemed to know in each section which plant furnished the toughest and most pliable root, the location in which it lay, and when it reached its best.

Basket Material.—Khät are the roots of plants, and it is the roots of the young and healthy seet (spruce) which they say are pre-

ferred, as offering the most desirable kind in pliability and uniformity in texture. In the spring of the year, when the sap began to run, it was a common thing to see women pass from tent to tent, making up a party to go "khât tearing." It seems that the preparing of the khât is an industry left to a certain class of women. One often heard an expert weaver recommending to another, thus: "khât prepared by so and so are always nice, long and uniform in size, and the surfaces are never injured." You might guess as well as a Tlingit man the meaning of all this.

In the summer camps it was also a common thing to see, suspended near some tents, strings of cut stems of various kinds of green grasses, hung out, as I have learned, to season and bleach. These the basket makers called *shock'*.

Basket Designs.—The basket has now passed into modern trade. The skill and taste, which at one time were put to the manufacturing of the merely useful receptacle, now lead to the making of choicest *shock'* with which to bring out the desired designs as accurately as possible, and with this adaptation, the old time, self color "hat brim" pattern which, in Chilkat, was the only ornamentation seen on the border of some burden baskets, found itself among a multitude of new patterns which are worked with colored *shock'* in the weave which is called false embroidery. This is a method of ornamentation in which the outer surface of the Tlingit twined basket is covered wholly or in part with the designs, which, however, do not show on the inside. The weavers call this *yädä-shock'* "surface-entwining."

As the knowledge of designing with the *shock'* extended down through the region occupied by the Tlingit people, there was no end to the things which, appearing each right after the other, suggested new forms of patterns. There were the natural features of objects, such as plants, mountains and rivers; animals or parts of animals; if an entire creature could not be shown some minute part would represent it. All these ideas were exchanged among the weavers, and some were sometimes changed to suit the whim of the buyers. All these various ideas in designing in turn created among the women an emulous feeling in æsthetic ideals and technical skill, which became a potent factor in refining the art of designing. But the method of construction has not been improved upon. There are in the possession of some old families, baskets that were made prior to the intrusion of the white peoples. The forms and designs on these are similar

to many now made. This indicates that the art has kept, to a great extent, its old time purity.

Coloring Basket Material.—With the development of yādā-shock' came coloring. There came into use the first natural pale yellow, which was turned to various shades after the "wolf-moss" was discovered; the white alder furnished the various shades of the orange color; after a while weavers began to scrape off the soot from the timber support over the fireplace, which furnished the black,



The chewkaet, used by girls as a berry picking basket.

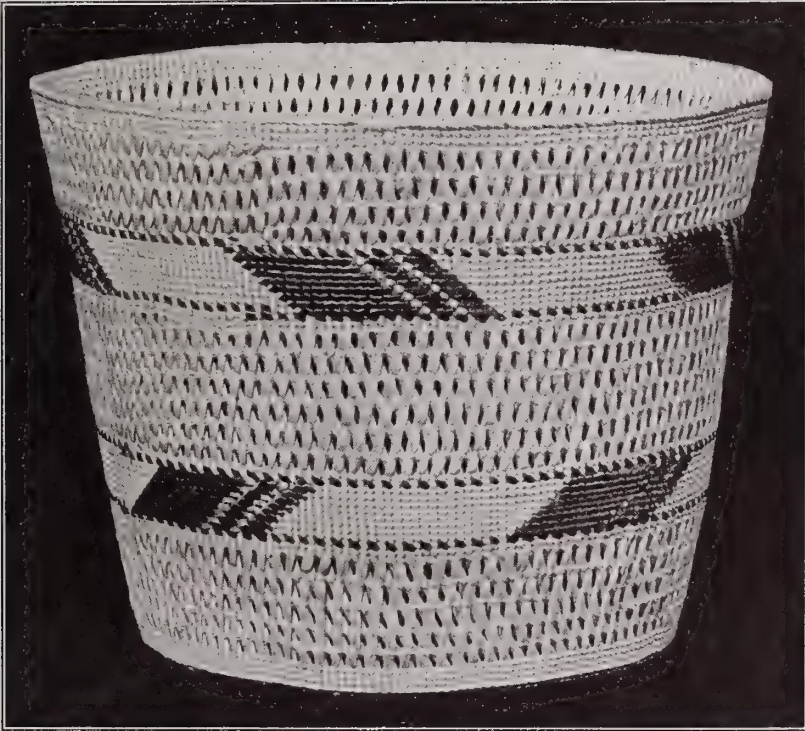
FIG. 50.

and by diluting or mixing this with some other color furnished the various shades of brown; blueberry had long suggested itself in coloring the basket in various shades of purple. If you can imagine yourself in the place of the basket maker, you can keep on adding to the things from which she drew her scheme in coloring. After all, to dye straw is not such a profound secret as some imagine.

Use and Names of Baskets.—Wood was always at the command of the Tlingit people, and a wooden box was much easier to make than

a woven basket for the purposes of cooking by boiling and of carrying water. Only among a plain sort of people and the uneducated was one utensil used for many purposes. In nearly all families there was a variety of utensils, devised to accommodate the various purposes. But when away from the permanent homes there were an infinite number of ways in which the root basket lent its services.

The basket forms took their names either from their uses or from their shapes. Few examples are here illustrated, and owing to



The wogis khöt "eyelet of khot", showing the weave of the khöt, an old time straining basket.

FIG. 51.

the limited space some of the types have to be given only by brief descriptions:

Qäku'-tahyi', "basket-lower half," is a basket made for the purpose of cooking foods by boiling. As its name implies, it appears like a common cylinder with the upper half cut off. The heavy root strands used make its body much stiffer than that of an ordinary kind, and its border is greater in diameter than its foot, which makes it flare like a tin dishpan. The reason for this is that when the basket

is placed in the hole dug in the ground for it, the sides, which become yielding when exposed to the intense steam, are held up between the surrounding earth and the weight of the contained liquid and since the steamed sides have a tendency to fall toward the liquid, they must in this case lean toward the solid earth.

It must not be supposed that the basketry cooking pots were placed over a fire, as those of a metal. As I have already said, a hole was dug in the ground, and in this the cooking basket was placed, about one third of its height standing out above the level of the



The "hat crown" form. The small basket represents the finest weave of the present time.
FIG. 52.

ground so that no dust or sticks should fall into the cooking. This projecting part was supported by four stakes, each of which, at an equal distance apart, was driven down against the outside wall, with its upper end fastened to the border of the vessel. After the pot had been thus secured against accident, the food and water were placed in it, and with a pair of wooden tongs the stones which had been heated were dropped into the cooking.

Tähl', "flatten," is illustrated in Fig. 49. This shape was made to be used in berry picking, especially the huckleberry, which

grows as if it had been spilled or scattered all over the field, and to pick it one at a time would be a tedious job indeed, so the problem of the quickest way was solved by the invention of the *tähl'*. The berries are then put by handfuls, leaves and all, into the flat basket, and after a number of handfuls it was then taken up with both hands, shaken in a whirling motion, the contents bounced up and down, and blown on at the same time, thus driving off the leaves, and the sticks were removed before the berries were emptied into the all around cylindrical type called *chewkaet* (Fig. 50). The name *chewkaet* means "always at the side" of the picker, and it was not allowed to stand at a certain point, as in other kinds of berry picking, since Madam Bear herself was sometimes out for the same kind of berries, and whenever she came upon a basketful it was a "help yourself" with her.

The huckleberry picking at Chilkat, was attended with a spirit of fun making; hence, no young person was compelled to join a party going to the berry mounts, and for this occasion most girls had their *tähl'* and *chewkaet* made with some attractive designs, not only to carry something nice on the picnic, but also to identify their own among many other baskets. The handiest size of the *tähl'* was about fourteen inches in diameter, and the *chewkaet* held about two pecks.

Khõt is a term applied to an open work basket, the weave of which is shown by the modern basket illustrated in Fig. 51, but the original shape was something like the lower half of a sailor's dunnage bag. The *khõt* was employed in trying out fish oil; it was used also for cooking in a dug out wooden pot. Meats or berries were placed in the *khõt*, and dipped into the water that had been boiling in the pot. The largest of this type has a capacity of about one bushel.

Qäku'-khisha (drinking basket) is a term applied to a small cylindrical basket, almost the same in size and shape as a pint condensed milk can.

Since a normal person is able to put his lips to an open stream of water, there was no great need of a drinking cup, but during the days when the custom of lustration had to be observed, even the stomach was cleared in the purificatory ceremony; to do this, salt sea water was used, for its emetical quality, which was usually taken in seclusion, and for this purpose a small wooden box was provided, but in the possession of the ever shifting class of hunting families the drinking basket was occasionally seen.

Wushto-qa'gu (one within another) is a small cylindrical case, made in two pieces, one sliding within the other like a telescope. The average size of this type is about three inches in diameter for the outer piece, and about four inches in length for each. Formerly this type was made for use as a case for charms or magical medicines, and has been more particularly the property of the shaman, which accounts for the extra fineness of workmanship seen in all those found. Wushto-qa'gu is said to have been the first type made, in Chilkat, with a design; but the embroidery on this first one was worked with split quills of eagle feathers. So this must have been long before the shock' was introduced among the group.

Although the root basket, in Chilkat, has always served well in many ways, the thought of its use came mainly with berry picking, which was one of the important industries in the locality. After the products of the summer season had been laid in store for the winter, the principal one among those gathered during the autumn was kawhueh', a red, juicy berry which is sometimes called "high bush cranberry."

There were quantities of the kawhueh' to be found almost anywhere along the Chilkat River, but some picking grounds were handier than others. These were not far from the villages and some were along lakes, while the others were along swift streams and hilly places which were not so easy to get to. Hence, in order to give everybody an equal chance to an easy time, a day was announced by the "townsmen" (town council) for what was termed "pickers' stampede," and until that day no one was allowed to go for the berries.

When it came to the provision with regards to the maintenance of life there was no exception made in the rules which governed the economic life in Chilkat: the nobleman, the townsman, the rich, and the poor enjoyed equal rights, but it also became necessary to adopt rules which protected these rights. Near the day of the pickers' stampede slaves were stationed to guard the best picking grounds against a greedy or selfish person, who would sometimes steal ahead regardless of the rules; if any violator was caught picking there, before the day set for all, he never escaped his punishment at the hands of the authorized guards, which was, sometimes, besides losing all that he had picked, to have his canoe destroyed.

A day before the pickers' stampede families from the neighboring villages began to arrive at Kluckwan, the principal town in Chilkat,

which was always the starting point on the occasion. It was the day on which all baskets were brought out and unfolded, and their pack straps adjusted, as were other camp equipments, and everything was fixed in readiness for an immediate start.

It was not every Tlingit who fared well on the kawhueh', in fact there were many who would not eat the berries in any style, but the excitement of the pickers' stampede caused enough thrill to arouse even an indolent person to move lively and to mix up in the rush of the start. The occasion inspired them somewhat as the white man's patriotic celebration does him, one joined whether or not it benefited him.

At dawn of the set day, one was roused from a happy dream by a confusion of noises: there were sounds of moving things; there was laughter; shouting and yelling at some delayed person to move lively; all in chorus with the howling and yelping of many dogs that were about to plunge in to swim across the river after their masters' canoes. It was the pickers' stampede which came only once in a year, so no one should entertain a feeling of disgust at anything. Would this day be comparable to that of the out door sports or the field day of modern times? Nay, the thrill of the sports are felt only by the young and sometimes rich, and it is usually a thing of the past with a matured person, and some persons cannot always afford to participate. But on the day of the pickers' stampede, there was no exception, young and old, rich and poor for once felt alike, and dignity and pride were for the moment forgotten. There was never a healthy being left behind in Kluckwan, save the mangy dog which was always fool enough to chase after the wandering echoes of his own howls, from one deserted house to another.

When once started anyone might go as fast as he liked, and it was the slow man's own fault that he arrived to take what was left. There was, however, always ample space in all the fields, but the easiest grounds were the first taken, and no reservation of grounds was recognized. Only to show respect to the noble families of limited means, who were usually the last to arrive on the berry fields, some best places were left alone. As for the aged persons, there were always many young men to volunteer their free services to the needy.

A set of three sizes of baskets was made for use in this kind of berry industry. The first, called sēgā-tā'na, "neck-carrier," was suspended with a cord around the neck, and hung against the chest



Haida rain hat, one of the samples of the old time basketry.
FIG. 53.

of the picker; into it berries from the bushes were thrown. It was the smallest of the set, with a capacity of about two quarts.

The second, called *yä'nah*, "packer," was carried around on the back by means of a single packstrap which encircled the shoulders, with both ends secured to the two loops supplied on the border. Into the *yä'nah* the *sëgätä'na* was recurrently emptied. It was medium in size, with a capacity of about one peck.

The third was called *qä'ku* (an old term, the definition of which is unknown, applied to baskets in general) or was sometimes called *täh-ton'*, "bottom-rest" (stationary). This was the largest of the set, with a capacity of about two bushels, the measure which equals a little over one hundred pounds in weight. The pliable, yielding walls of this size required a support in some manner to hold the whole from settling toward the foot, to comply with this the body was expanded in the middle of the height; thus the belly shape. So when the basket was full the reduced circle of the border was held up by the loose load itself. *Tähton'* was a term derived from the method of placing the burden basket at a convenient point on the berry track, so that a number of pickers might empty into it. Each picker, then, carried around the *sëgätä'na* and *yä'na*, and when these had been filled they were emptied into the *qä'ku*. When the *qä'ku* in turn had been filled a man packer came along and carried it into camp or to the canoe landing, informing the pickers of the location of an empty one.

The *kawhuëh'* picking was all done in two days at the most. There were about four *qäku*-measures picked to each adult, and some families were usually satisfied with a ten *qäku* load. There are a number of interesting methods to be described in the *kawhuëh'* industry, but we will have to conclude with some idea of the former chief purposes of the Chilkat people with the basket. And we could go on for many more pages, describing types that have, from time to time, appeared since the Tlingit basketry came into modern trade, but we can make only a few more remarks about those we should not leave out.

Among the finest specimens in the large collection of the Tlingit baskets, placed on exhibition in the North American Indian basket room, in the University Museum, is a medium sized basket of recent make (Fig. 52). The crosslike designs on the two outer bands are the variations of what they called the "shadow of raven's tail," while on the middle band is embroidered another old design called "incline, or



The shādāh-kooahu' "top stock" in which spruce root was first used.

FIG. 54.

mountain-side vine." There was never any question about these, but the curved in outline of the walls caused question by some authorities on the art of North American Indian basketry. There seems to be some doubt about this type being an old one, but, from its native name, sāhu-shāki'yi, "hat-crown," it must be old. True enough, it is one of the most difficult forms to make among the Tlingit baskets, but the reducing of the middle part of its height is not a new invention as can be seen by comparing this with the crown part of the old rain hat illustrated in Fig. 53.

The rain hat is one of the samples of the old time basketry; the form is said to be an invention of the Haida speaking people, who inhabit the Queen Charlotte Archipelago. The brim part was

usually covered with the intricate, self colored patterns which appeared like zigzag lines in relief. This same pattern was woven on the border band of some of the burden baskets. The totemic symbolism which is seen on some was never embroidered, but painted on, as on the specimen shown.

Shādāh-kooHu', "headcover stock" (headcover with stock), is a term applied to the old ceremonial hats, one of which is here illustrated (Fig. 54). The name is derived from the cylindrical ornamentation rising from the top of the crown. This "top stock" form is the masterpiece in execution and ornamental weaving; its complicated formation is a lost art to the weavers. There now may be an expert basket maker who is possessed of sufficient skill to copy the top stock, but no attempt has been made to reproduce it. The flexible ornamentation of the hat illustrated is woven like a cylindrical case of four circular boxes, connected in intervals, each by a constricted tubelike opening, and it can expand and contract like an elastic band. Shādāh-kooHu' was the first object in basketry which was mentioned in Tlingit mythology, and the workmanship on it justifies its claim to the origin of the art in spruce root.

Before I stop, let us go back to the old "Rest-in-shadow." I call the old basket which is illustrated in Plate VI by this name because I am almost certain it is the same one which, at one time, was transferred along with other classes of property, by one of the clans of Hlāhāyik' to its rival party, at war, of Chilkat, as an indemnity. The basket afterwards was often referred to at Chilkat in a manner of ridicule, because with them all root baskets were made for use in berry picking, and a mere utensil bearing a personified name, was ridiculous. Hence, at its new home, Rest-in-shadow was disgracefully thrown in among other common burden baskets, and after many years of hard service it was given to a Whoozdā-quan' trader in exchange for two sacks of potatoes. This was the last thing I remembered hearing about it.

As I look at and study the old basket which has come through so many changes of life, it seems to me that it has indeed reached its final stage of service, but the idea of the maker can still be seen through the veil of age. Every item of form, color and design of this old specimen has in it the true element of native art. The designs: on the two broad bands, between the sidewise series of the shark's teeth patterns, are two vertical lines of solid brown, each pair on the natural straw background, representing shadows of two

standing trees, by which, obviously, the name of the basket was shown. On the narrow middle band are the tracks of a fortune hunter, who searched here and there, from side to side along his trail. And the crosslike patterns, at equal distances near the foot, are a design representing the shadow of raven's tail; while the body of zigzag lines placed in between, represents the current of a stream of water. Only the maker's people knew the meaning of this combination of patterns.

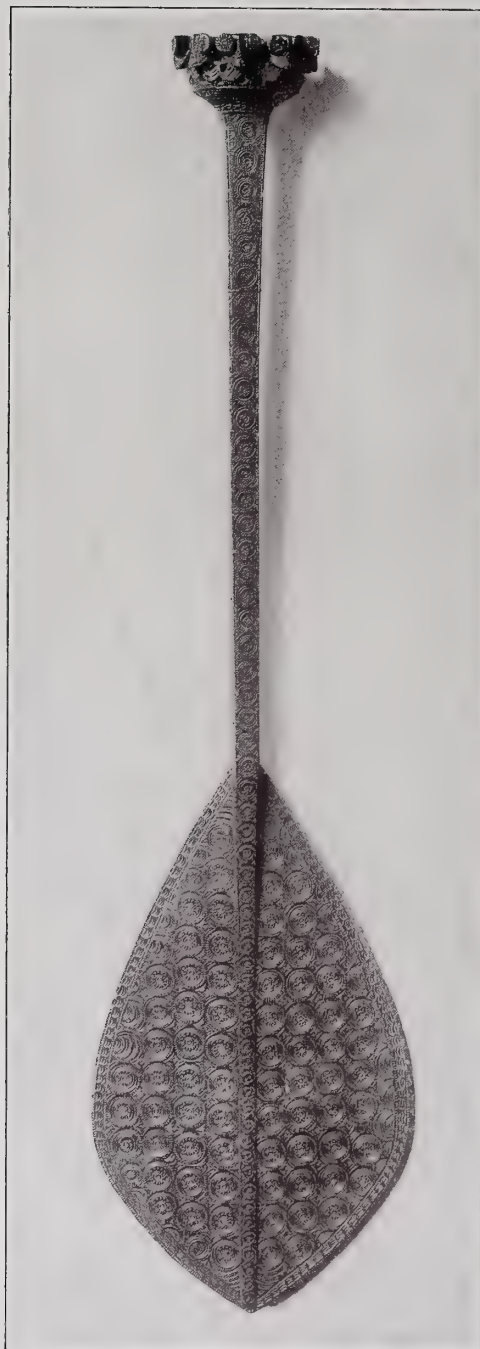
From what we have heard about it the old Rest-in-shadow was created in glory and was offered with pride, but in the land where higher art prevailed it became a slave. After years of hard life it drooped into pensive sadness, and, like many others of its kind, in the vale of melancholy, its last service to humanity was to have been to support the cradle of the new born, thence to its rest in some abandoned burrow. But the hand of the white man invaded the precincts of "savage" life in time to rescue it from its last humble service, and to place it in a position worthy its beauty.

L. S.

WOODCARVINGS OF THE AUSTRAL ISLANDS

A PROMINENT feature of the exhibition of Polynesian artifacts in the General Ethnology Section of the Museum is a number of beautifully carved paddles, so called, from the Austral Islands. This class of objects, whose use was probably ceremonial and whose ornamentation had a religious or quasi-religious significance, has formed an important part of the material which has served to illustrate the discussion of the evolution of ornament among primitive peoples. Among the most important contributions to this discussion are the treatise of Sir C. H. Read, "On the Origin and Sacred Character of Certain Ornaments of the South-Eastern Pacific" [*Journal of the Royal Anthropological Institute*, Vol. 21, 1891-1892], and that of H. Stolpe, "Phenomena of Development in the Ornament of Primitive Peoples" [*Mittheilungen der Anthropologischen Gesellschaft in Wien*, Vol. 22 (N. S. 12)]. The similarities in the decoration of objects from different islands or groups of islands in the part of Polynesia—the Southeast—with which both writers deal, the fact that religious traditions and usages identical in many respects prevailed throughout the region and that communication was maintained among all the groups from the Herveys to the Society and Marquesas Islands, justify the assumption that the whole region may be regarded as a single ethnological province.

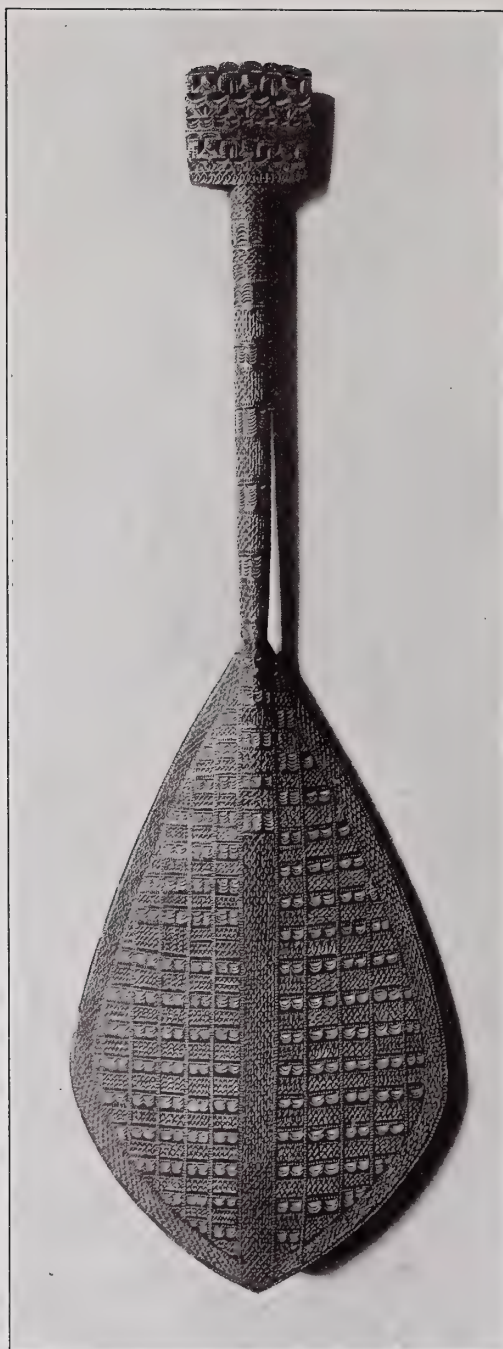
Some of these facts are apparent from the earliest accounts. Captain Cook, sailing south from Tahiti in August, 1769, took with him a Tahitian native, Tupia or Tupaia by name, who, on a new island being sighted on the 13th of the month, told him that it was known to the Tahitians as Oheteroa. This was, in fact, the first of the Austral Islands—so called later by Malte Brun—to be sighted by a European sailor. Though Tupaia was mistaken as to the name of the island in this particular instance—it was, in reality, the island of Rurutu—he was able to indicate with considerable accuracy for placing on a chart drawn from information which he gave to the explorers the names and position of a large number of islands from the Marquesas in the northeast to the Hervey or Cook Islands southwest of his native group, and even beyond in the latter general direction. Rurutu he placed correctly at another time on the chart under its proper name and in company with two others of the group



A "paddle" from the Austral Islands. The graceful proportions and the delicate precision of the workmanship make this a masterpiece of primitive woodcarving.

FIG. 55.

now usually known as the Austral Islands or the Tubuai group, from the island of Tubuai, discovered by Cook in 1777. The inhabitants of the various archipelagoes in this part of Polynesia must then have been in fairly frequent communication with one another. [Cf. The United States Exploring Expedition: Ethnography and Philology, p. 143, Horatio Hale]. Hale [op. cit. pp. 141-143], following Ellis [Polynesian Researches (ed. 1853), iii, 380-381], is of opinion, based upon a statement in the Introduction to *The Voyage of the Duff*, quoted by Ellis [loc. cit.], and upon linguistic evidence, that the Austral Islands were settled from the Hervey and Society Islands only so lately as within the last two or three centuries (reckoning back from 1846) and Tubuai in particular not more than a hundred years before its discovery. However this may be, abundant evidence of various kinds is forthcoming to establish the fact that these three groups of islands in particular were closely linked culturally. The *tiputa*, a poncho-like garment of bark cloth, which Cook found the Tahitians wearing, he reports also from Rurutu [Cook I (Hawkesworth's edition), ii, 275]. This was a specialization in wearing apparel not likely to have been of independent invention in neighboring areas; its use in Samoa is to be credited to the missionaries who introduced it from the Tahitian or Society group in the early nineteenth century. The Tahitian variety of Polynesian speech was readily understood in the Austral Islands. Raiatea, one of the Society Islands, was the acknowledged center of religious authority in a radius of hundreds of miles of ocean, [Bastian, Inselgruppen in Oceanien, p. 21; Tyerman and Bennet, Journal of Voyages and Travels, i, pp. 529, 530, 555; ii, 14]. There was a tradition in Rarotonga, of the Hervey or Cook group, that that island had been removed by the gods from its former situation near Raiatea to its present position. Thus, in the *Missionary Enterprises* of John Williams, "another [Rarotongan] demanded [of a Raiatean member of Williams's crew], 'Why did you Raiateans kill those men, whose death induced the gods to remove our island to its present situation?'" In a footnote to this the author remarks: "This evidently shows that the Rarotongans have the same traditions as the Raiateans, and, by the variety of information they possessed relative to the Society Islands generally, but more especially to Raiatea, that being the grand emporium of idolatry, it is certain that at some former time more frequent communication must have existed between the islanders" [op. cit., p. 103]. It was by trusting to the native



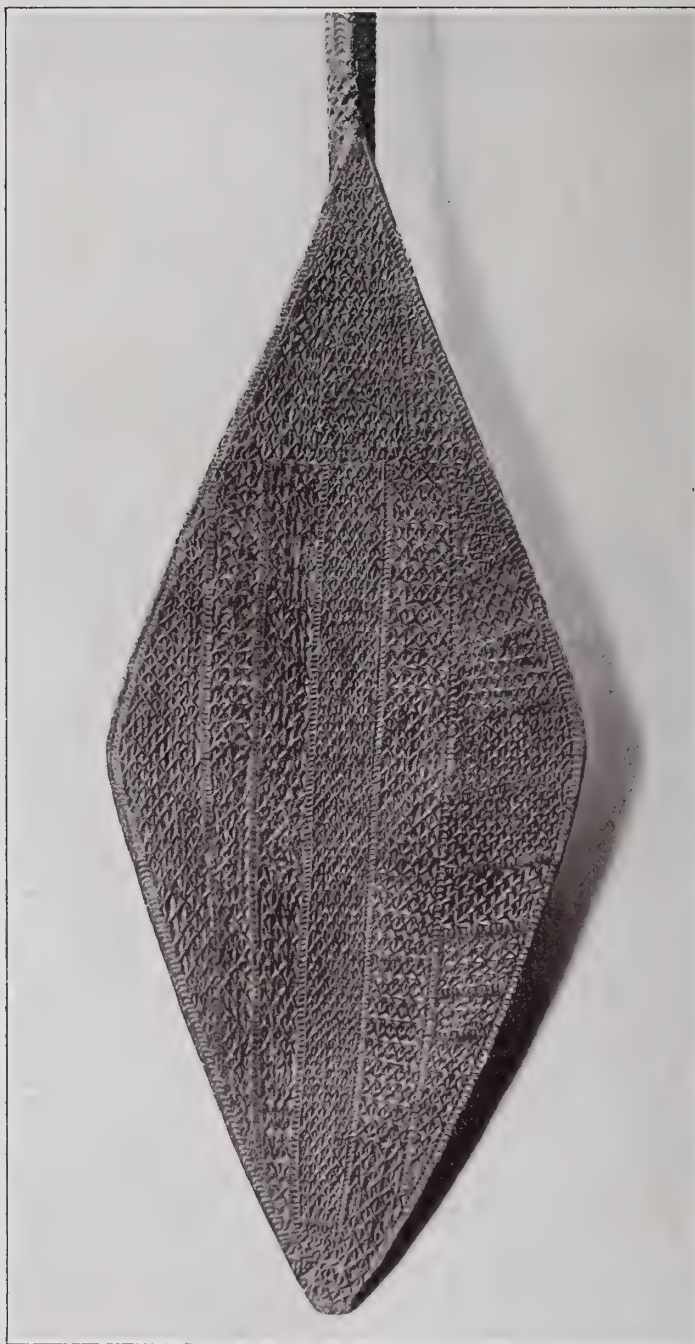
A fine example of the "paddles" with handles terminating in rectangular butts. There is a double row of figures with "cocked hats," those below being without the lower leg.

FIG. 56.

method of employing landmarks "by which they steer until the stars become visible", and steering accordingly, that Williams, sailing from Atiu, discovered the distant island of Rarotonga in the same group (the Herveys), of which he had heard before from the natives and endeavored unsuccessfully to reach.

The objects which Stolpe uses to illustrate his demonstration of the derivation of the ornament characteristic of his "Rarotonga-Tubuai-Tahiti province" (of ornament) from representations of the human form are the adze handles of Mangaia in the Hervey Islands and the "paddle-form implements" of the Tubuai or Austral Islands. On the adze handles only the final result of what he shows to be the degeneration of representations of the human figure into recti- and curvilinear ornament appears. The paddles show this final result in an identical form, but also on the same examples the human figures, somewhat stylized, which are the starting point in the process of degeneration. The objects from which Read draws his illustrations are more varied in character and diverse in their places of origin (within the "province" referred to) than those in the contemporary but independent study of Stolpe. It is important to note that the theoretical demonstration of the origin and development of the style of decoration shown on these objects has confirmation from reality in the account of the signification of the carving on the adze handles of the Hervey Islanders given by the missionary W. Wyatt Gill from native sources. According to this account this carving, consisting, in the final stage of its development, of bands of lozenges bisected and separated by straight lines, was said by the natives to represent squatting figures of men—*tiki tiki tangata* [Gill, *Jottings from the Pacific*, p. 223]. On the occasion of the reading of Sir C. H. Read's paper before the British Anthropological Institute, the President said that Mr. Gill had made a remark of similar bearing to him in conversation.

The form of the Austral Islands "paddles" and their characteristic decoration are illustrated here from examples in the University Museum. The blades vary in shape from rhomboidal, as in Fig. 57, to the commoner broad oval with the widest part nearer to the extremity (Figs. 55 and 56). The shaft of the handle is rounded or rectangular in cross section; the butt is a rectangle or trapezoid (Fig. 56) or else roughly conical in shape. On the butt the typical ornament is of squatting human figures with arms



Blade of a "paddle" having the less common rhomboidal shape.
FIG. 57.

conjoined. When the butt is of the conical form these figures are in relief; otherwise they are in intaglio. Certain differences in the posture of the figures correspond generally to the difference in the form of the butts. On the conical butts the arms form a simple link between the figures grouped round the cone; there is no segmentation to indicate the joining of hands (Figs. 58, 59, 60). On the flat butts the arms are bent, the upper arm descending diagonally towards the crescent shaped thighs, while the



Butt of Fig. 57. Conjoined human figures forming a band of ornament.

FIG. 58.

horns of the crescents, representing knees, point upwards between the vertically placed forearms which terminate two by two in a common denticulate band having an indeterminate number of teeth representing fingers, usually six or seven (Figs. 56, 61). The lower limbs in both forms of the figure are the same, with crescents for thighs (the concavity, curiously enough, being upward), while the lower legs are directed inwards towards each other at a sharp angle with the thigh. In both cases the figures are outlined with single

or double denticulate lines, this being a common form of border for the divisions, large or small, of the design in all parts of the "paddles." This feature of the decoration is known, in the case of the Hervey Islands adze handles, as *nio mango*, "sharks' teeth." Another difference in the treatment of the figures in the two forms of the butt is seen in the heads. On the flat butts these are crowned with incised lines in the form of segments of concentric circles or ellipses, forming a series of arches the ends of each of which seem



Butt of Fig. 57, showing, with Fig. 58, different ways of decorating the raised discs on the foreheads of the conventionalized human figures.

FIG. 59.

to be supported by the hands of the crouching figures (Fig. 61). The heads of the figures on the conical butts bear on the forehead each two large discs or buttons carved in bold relief (Fig. 60.) Stolpe calls these "eyes," and the design consisting of concentric circles which covers the shaft and blade of Fig. 1, and which he considers to be a repetition of these discs, he calls the "eye pattern." That they are not intended to represent eyes may readily be seen from an examination of Figs. 58, 59, and 60, where the eyes show clearly

beneath the prominences on the forehead. The so called eyes on the shafts and blades may be derivatives of those discs which are decorated in the manner of the two on the left in Fig. 60.

Since these protuberances are not representations of eyes, what are they intended to represent? Structurally, they seem not to be merely an excrescence on the forehead but to enter also into the sculptural treatment of the portion of the head behind it and them, as they might do in an attempt to represent a roll of



Butt of Fig. 55.

FIG. 60.

hair on each side of the head terminating anteriorly in a flattened coil. That they are treated as a separate element in the carving of the whole top of the head may be seen from Figs. 60 and 62, the latter being a view from above of the butt of the handle of a "paddle" which, in the former, is seen from the side. I do not know of any description of Austral Islands coiffures, but the arranging of the hair in knots on different parts of the head was customary in that part of the Pacific. Thus we read of the Tahitians: "Frequently



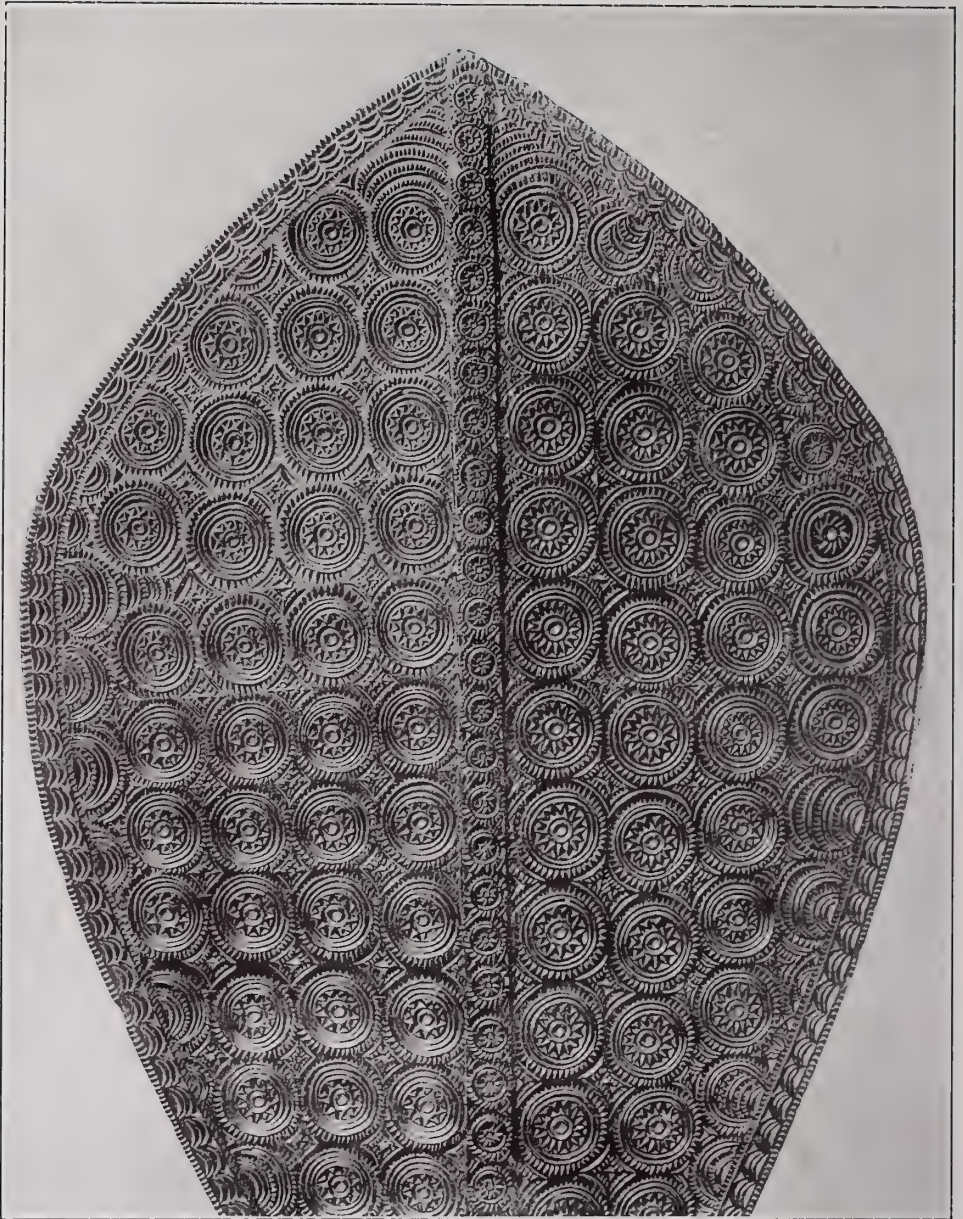
Upper part of a "paddle" showing the characteristic form of the figures on the flat butts.
FIG. 61.

[their hair] was . . . wound up in a knot on the crown of the head, or in two smaller ones above each ear." Again: "The men generally wore [their hair] long, and often fastened in a graceful braid on the crown, or on each side of the head" [Ellis, op. cit., i, 132, 135]. Cook [II, i, p. 309] notes a similar arrangement of the hair in the Marquesas: "Some have their hair long; but the most general custom is to wear it short except a bunch on each side of the crown, which they tie in a knot." In Ulietea one's



Top of the butt of Fig. 55.
FIG. 62.

own hair was enhanced by that of others. "The women [dancers] had on their heads a quantity of *tamou* [or plaited hair], which was rolled and flowers of gardenia were stuck between the interstices, making a headdress truly elegant" [Journal of the Right Honorable Sir Joseph Banks (ed. Hooker), p. 119]. *Tamou*, says Banks, was "an ornament [which] they value more than anything they have" [loc. cit.]. Much of Hawkesworth's edition of the "First Voy-



Lower part of the blade of Fig. 55.

FIG. 63.

age" of Cook is a mere transcription of the Journal of Banks, who was a member of the expedition. It is interesting to notice that the denticulate ornamentation on the top of the butt of the "paddle," Figs. 60 and 62, which emphasizes the sculptural division of the tops of the heads of the human figures into three lobes, is distinctly suggestive of the braiding of hair, and it is continued in the design of concentric circles in the middle of the upper surface, while this rosette is practically identical with those on the handle and blade of the same object (Figs. 55, 60, 63). It may be that the double row of "shark's tooth" carving with which some of the knobs are marked represents an arrangement of braids in layers rather than in coils as the more usual raylike disposition of the markings (in some cases suggesting a whorl as coiled braids might be expected to do) seems to indicate. Such a disposition of braids in layers, or long scroll-like coils, is perhaps also indicated in Fig. 58 and in Fig. 59. In the latter, the denticulations occur on one margin only and the suggestion of a braid bent back on itself, rather than coiled, is clearly apparent.

What was stated above (p. 185) as to the relation between trapezoidal butts and intaglio carving, conical butts and carving in relief, does not hold universally for the flat or trapezoidal butts. On some of these [cf. Fig. 64] the figures are represented in relief in precisely the same manner as on the cone shaped finials. If the difference in the style of butts corresponds to different places of origin—different islands within the Austral group—a point which is not satisfactorily determinable from the attributions, this departure from rule might easily be due to borrowing. Intaglio carving, at any rate, appears to be confined to flat butts, and the relation between intaglio carving of the heads, the crowning of these with the peculiar arches already mentioned, and uplifted hands also seems to be constant.

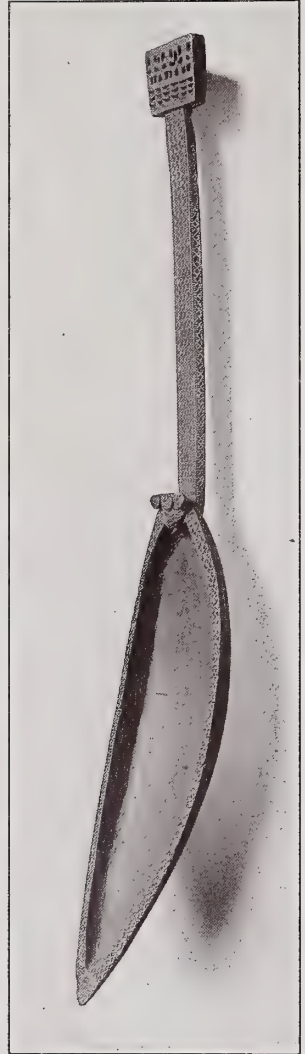
I am indebted to Mr. C. C. Willoughby, Director of the Anthropological Section of the University Museum of Harvard, for drawings and descriptions of two headdresses (as distinguished from forms of coiffure) of natives of the Austral Islands, which are now in that Museum. One of these is apparently of the form described by Ellis [i, 298]: "The most elegant headdresses . . . were those worn by the inhabitants of the Austral Islands, Tubuai, Rurutu, etc. . . . Those used by the natives of Tubuai, and High Island, resembled an officer's cocked hat, worn with the ends projecting over



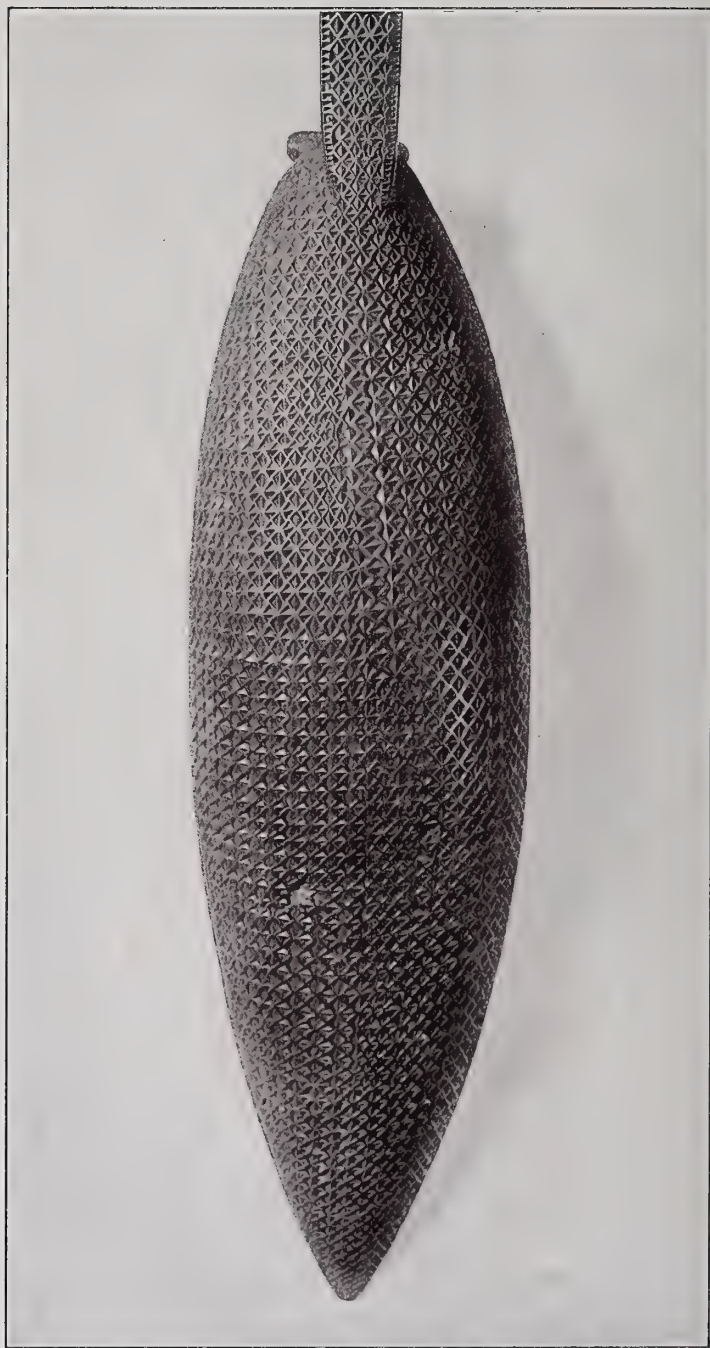
Flat butt with heads in relief.
FIG. 64.

each shoulder, the front beautifully ornamented with the green and red wing and tail feathers of a species of paroquet." Making allowance for a degree of conventionalization corresponding to that exhibited in the representation of the figures themselves, there would seem to be little room for doubt that, as Mr. Willoughby thinks, the arches which surmount these figures on the flat butts are intended to represent the headdresses of Tubuai or of High Island (Raivavai). And that great importance was attached to the headdress in many parts of Polynesia is well-known; a striking instance is reported from the Society Islands by Ellis. Speaking of warfare in the Islands, he says: "When the army of the enemy has come in sight, they used to look out for the *fau* [a sort of helmet worn by distinguished personages] rising above the rest of the army, and when they have seen one, pointing to it, animate each other by the exclamation, 'The man with the *fau*; ha! whosoever shall obtain him, it will be enough' " [op. cit., p. 300].

The other headdress in the Museum at Harvard corresponds closely to a "Rurutuan helmet" described by Ellis [p. 299]. It has the form of a cap decorated with bunches or rosettes of feathers, which Mr. Willoughby regards as being probably the prototype of the discs or knobs for which I have suggested above the possibility of a different origin. The identification of these particular features of the decoration of the "paddles" as headdresses would point to the island of Rurutu as the place of origin of those of the implements which have conical butts and to Tubuai or Raivavai for those with flat butts. All these islands are in the Austral group, and contact, friendly or hostile, would account for the mixture of styles which is exhibited in the occasional appearance of heads in relief on the trapezoidal handle butts. Such contact is in any case evident from the otherwise



A food scoop or ladle.
FIG. 65.

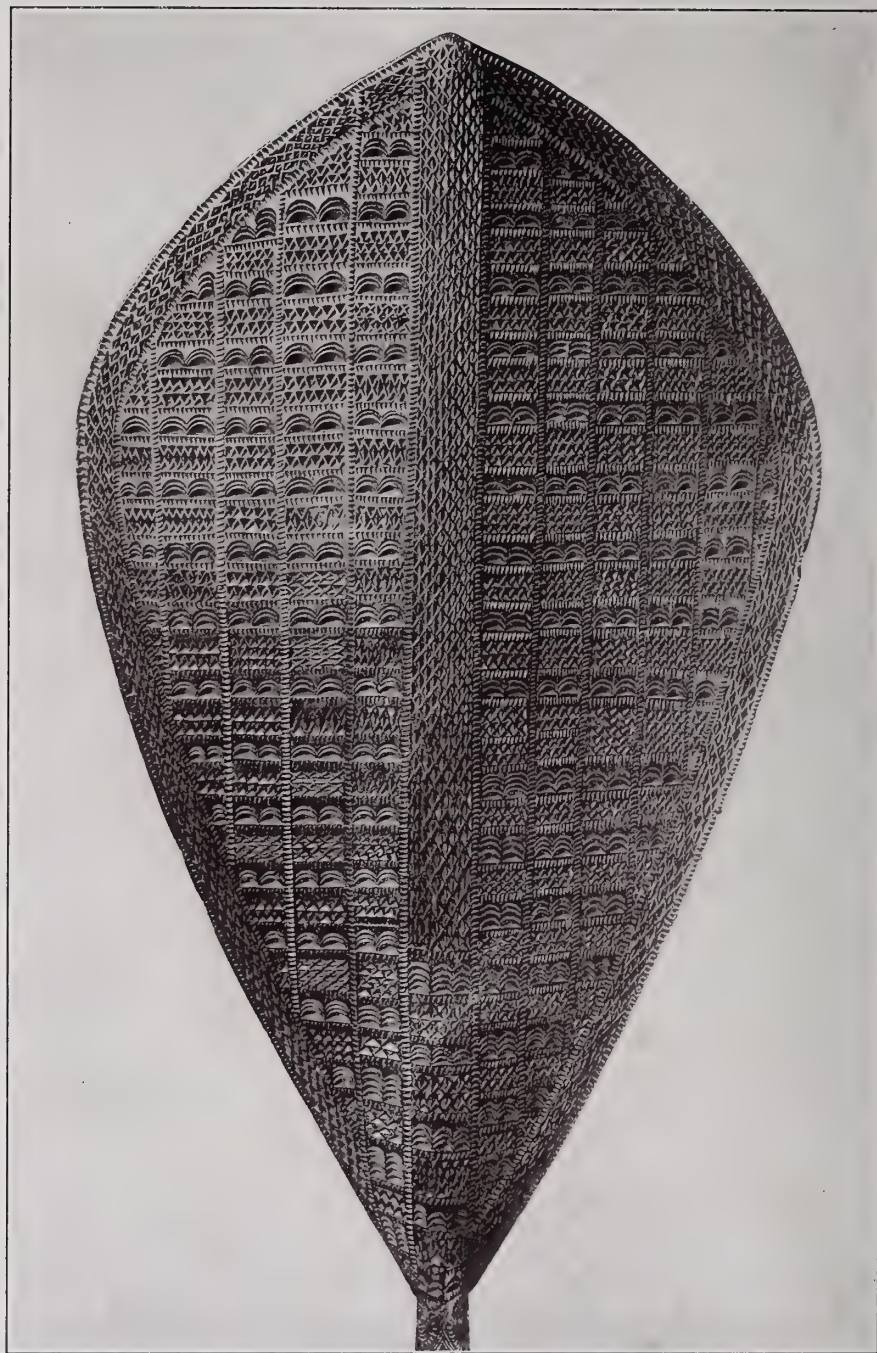


Back of the bowl of Fig. 65.
FIG. 66.

general conformity in shape and in style of decoration of these objects. The distinctions already pointed out may be due to a relatively late differentiation, and the mixture of styles to a still later tendency towards a return to uniformity, caused, perhaps, by a renewed frequency of communication.

Various conjectures have been made as to the nature and use of these elaborately carved articles. There is no decisive authority for describing them as paddles, though this designation is suggested by their shape. Stolpe considers that their comparative frailty and great variation in size does not admit of their being so described. He suggests tentatively that they may have been used as standards or emblems in ceremonial dances, such implements being known to other Pacific islanders. He points out objections to this hypothesis, however, and especially the existence of other objects decorated in a precisely similar manner, notably food scoops or ladles, such as that figured here (Figs. 65, 66). This, on the other hand, does not appear to be a fatal objection. There is no reason why two distinct classes of ceremonial objects, having different functions, should not be decorated in a similar way. If the symbolism which is embodied in the ornament represents attributes of a god or hero, there is no apparent reason why the same divinity should not, for instance, be celebrated both in dances and in feasts. L. Serrurier, in a criticism of Stolpe's monograph [*Internationales Archiv für Ethnographie*, iv, 1891], is "disposed to think that the paddles . . . were decorated with . . . ancestral carvings after the death of those of whom the paddle was the principal implement [since they spent so much of their time on the water], and that the artist modifying his design during the work according to his fancy, there resulted a diminution of the total bulk. This would also explain the abundance [in Museums] of these engraved objects and the rarity of those, which, being in use, are bare of all decoration." The objection based on the variety in size Serrurier meets by supposing that the smaller of these "engraved objects" were children's paddles. This is hardly satisfactory, for the range of sizes is too great to be accounted for in this way in regard to an implement for which practical considerations commonly dictate fairly well standardized proportions.

But they may have been intended as imitations of the paddles which were in practical use by "those of whom the paddle was the principal implement." This is a point which seems to have been overlooked by both Stolpe and his commentator. Yet the analogy

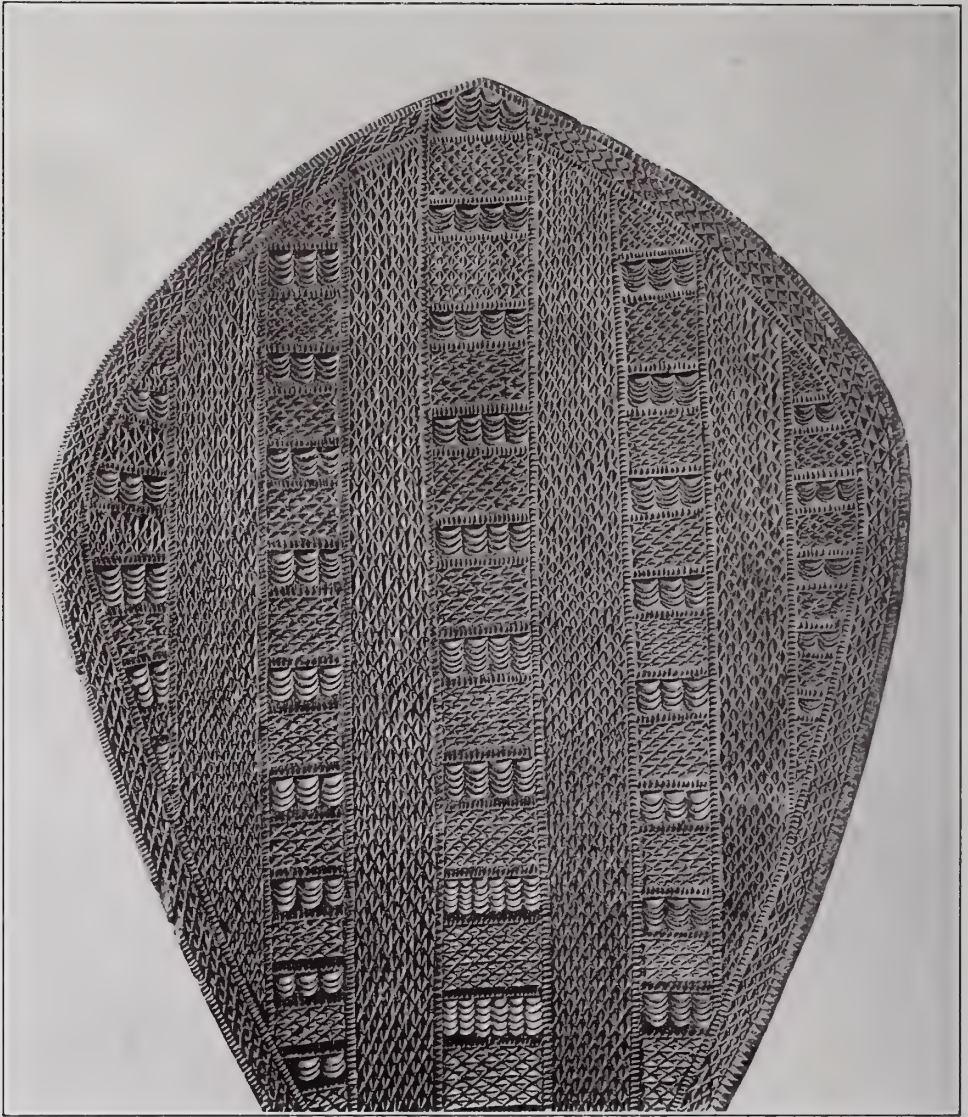


Blade of Fig. 56.

FIG. 67.

with the Hervey Islands adze handles, which, so far as the nature of the decoration common to both groups of objects is concerned, Stolpe employs to such good purpose, is surely as cogent here. These adze handles, as Stolpe points out, were most probably of the nature of memorials made to ancestors, and used, in the first place, as mounts for the stone adze blades which had been the property of ancestors so honoured. The forms which these handles assumed were fantastic and obviously not intended for any purpose of utility. A similar process of degeneration, from the utilitarian standpoint, may have transferred the paddles from the utilitarian to a commemorative, possibly also ritual, sphere. A parallel may perhaps be seen in the genealogical staves of the Maori of New Zealand. In these the head of the staff represents the figure of an ancestor, a human figure carved according to the conventions characteristic of that branch of the Polynesians, while each generation in the line of descent is represented by a prominence between two notches. While this is little more, apparently, than a mnemonic device, it is to that extent at least commemorative of ancestors to whom divine honours were accorded.

The diverse forms which the representations of deities (whether these representations were regarded as themselves gods, or merely idols, or as enshrining temporarily or permanently the gods) assumed in the southeastern Pacific agree often in the peculiarity that a number of more or less clearly recognizable, though highly conventionalized, likenesses of minor divinities are carved in groups on or beneath a figure representing a major divinity, which is commonly larger and in the representation of which conventionalization is less marked. The outline presented by the whole object is sometimes such that it appears to have no more than a merely decorative function, and a rather close examination is necessary to distinguish the forms of gods made by man in his own image. It may well be that the "paddles" of the Austral Islands are such gods, or god containers, in which the great gods, great enough to be pictured with as near an approach to realism as a sacred convention would allow, look down on the host of little gods for whose representation a few strokes would suffice. *Tiki-tiki tangata*—god men or man-gods—the line between human and divine was not very rigidly drawn in Polynesia; where the chief had often many attributes of godhead, not always only posthumously conferred. And so the transition need not be difficult or strained, from a memorial paddle to a divine



Obverse of the blade of Fig. 56.

FIG. 68.

emblem or to a god enshrined in wood or even transubstantiated there.

The carved figure on the handle butts is in the large majority of cases represented as female. Where the triangular pendent breasts are omitted, this is probably through carelessness or inadvertence; in Fig. 56, where they are missing in several cases and are very small in others, it can readily be seen how easily they might become absorbed in the shark's tooth ornament. In this connection it is to be remarked that *tangata* means "man" in the wider sense of an individual of either sex. And while *tiki* in eastern Polynesia may mean either "god" or "image of a god" [U. S. Exploring Expedition, Ethnography and Philology, Horatio Hale: Polynesian Lexicon, p. 333], it is a suggestive fact that in some places in this region Tiki is the name of the first of human ancestors, and is in Mangaia of the Hervey group a woman.

The beauty of the carving of the blades and shafts of the implements here illustrated is not due to a variety in the elements of the design, but to their tasteful grouping and to the precision with which the carving is executed. The elements are few, indeed, consisting, first, of chevrons placed, sometimes, in simple rows as such, but more often opposed and conjoined in such a way as to form rows or tiers of lozenges bisected by straight lines. These are the last vestiges of the legs and arms of the more realistically represented figures of the butts. Then there are groups of superimposed small demilunes, representing either the "cocked hats" of the realistic figures, their crescent shaped thighs, or, perhaps their eyes, which, as Fig. 4 shows clearly enough, are often represented by such markings below the raised discs on the forehead. A third element is the rosette which was referred to in the description of the figures. Finally, the panels, large or small, in which these elements are grouped, are usually outlined with the shark's tooth ornament, which defines the contours of the realistic figures also. Out of these few units of design, grouped in simple combinations, such beautiful examples of the woodcarver's art as are pictured in Figures 55, 56, and 65, the masterpieces of the collection, were wrought by craftsmen who had at their disposal, in the best period of their art, no more efficient tools than they could fashion of stone and shell and the teeth of the fish which fitly lent its name to a characteristic detail of their storied scheme of decoration. If we cannot read the tale, we can at least admire the piety and skill of the patient recorder.

H. U. H.



Archaic Head from Cyprus.
FIG. 69.

AN ARCHAIC HEAD FROM CYPRUS

IN the years that followed our Civil War the archaic art of Cyprus was often discussed in Victorian drawing rooms. General di Cesnola, who had served first as a colonel and after his discharge from Libby Prison as a brigadier general, was appointed, in 1865, United States Consul to Cyprus. Archæology was not in those days the serious matter it has since become and Cesnola did but follow the example of his British and French colleagues in devoting himself to the pastimes of digging and collecting. The buried cemeteries and sanctuaries of the island, packed as they were with pottery and sculpture, afforded a happy hunting ground and these diplomat-archæologists soon began to divert streams of vases and statues to their respective countries.

The archaic sculptures that reached New York were but little understood. Critics of that day and even of the eighties were accustomed to marble or bronze as the materials for antique art, so that sculpture worked in soft limestone fell quite naturally under their suspicion and their fears were not allayed when they discovered that colors had been used to enhance the modeling. The very numbers in which these statues were found was also disquieting. It is easy now, in the light of the discoveries at Olympia and of the archaic pediments found by the Greeks on the Acropolis, to smile at the storm of criticism these statues aroused. Anyone who has visited the Acropolis Museum at Athens will recognize at once in the Cesnola sculptures the contemporary art of a smaller center, an art that was at once provincial and cosmopolitan, fraught with no real greatness and deflected from its course by all the waves of foreign influence that swept over the island. The progress made in archæological science since the eighties could not be better shown than by a comparison of the early descriptions of the Cesnola collection with the masterly catalogue of Prof. John L. Myers of Oxford, published in 1914 by the Metropolitan Museum. His analyses of Cypriote antiquities are a complete exposition of the invasions and revolts, the new cults and old rituals, the economic ups and downs which this distracted island witnessed in the course of a millennium and more.

Ardent as were the Victorian diplomats in their antiquarian pursuits, and countless as must have been the nightly raids which illicit diggers have carried on since then on Cypriote sites, sculpture



Profile of Fig. 69.
FIG. 70.

is still found in Cyprus. In the summer of 1920 an excellent limestone head, modeled in the manner characteristic of Cypriote art of the best archaic period was brought to Philadelphia, and through the generosity of Mr. John Cadwalader was purchased by the Museum. The head is over life size measuring a foot in height and like all Cypriote sculpture is wrought in soft, chalky limestone. The lower surface of the head shows that it was inserted in a statue. Traces of color still remain, blue for the eyes, red for the lips, black for the beard. The eyes and eyeballs are slightly modeled, the nose large, the beard and hair rendered by rows of corkscrew curls. A heavy fillet is tied about the head. The ears are correctly placed. If these details be compared with corresponding details in the statues in the Cesnola collection, the head will be seen to resemble more closely a number of statues dating from the opening years of the fifth century B. C. This is the period immediately following the ill starred revolt of the Ionian States, the moment before the great struggle with Persia in which Cyprus played a confused and inglorious part. Artistically, this period is the best; foreign influences had ceased to distort and stultify, Attic and Ionian models were still at hand to inspire Cypriote craftsmen. A century before the influence of Egypt would have been apparent in Cypriote art, a century later Cypriote sculpture had "perpetuated in lonely stagnation an archaism which it had all but outgrown."

Cypriote sculptures are almost always from sanctuaries, walled enclosures open to the sky and containing shrines before which the faithful prayed. A sacred stone or pillar was perhaps contained within the shrine or tabernacle, the very dwelling place of the god. Spirits of local springs and hills doubtless received homage in such shrines, so also did the earth mother who gives increase, and Zeus the thunderer, who gives light and rain. Neglect of any of these mighty gods so full of vengeance and by no means slow to anger might cause the ruin of a sorely needed crop, the death of a loved child. Prayer was no matter of sentiment, but one of stern necessity. And yet to be always praying and participating in the rites of the sanctuary was impossible; the votary accordingly dedicated a statue which would constantly perform these sacred acts for him. Our Cypriote head belonged to such a statue and represented either a priest, or more likely the donor himself, wearing the fillet with which he bound his head when he went to pray.

E. H. D.

UNIVERSITY OF PENNSYLVANIA

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¶ The Purposes of the University Museum

¶ To give to Philadelphia a Museum that will be in keeping with its traditions, that will answer to its needs and that will sustain its historic repute as a Stronghold of Civilization.

¶ To assemble collections that will illustrate the achievements of Mankind in the field of Art, and to cherish and preserve this Heritage from the Past.

¶ To trace the origins of Civilization and to reconstruct the successive steps and the varied episodes that have attended its development.

¶ To encourage the Arts; and to demonstrate the debt that Civilization owes to the Artist and to the Craftsman.

¶ To encourage Research, to send out expeditions to excavate the buried cities of Antiquity and bring to light the records of the Past; to gather and preserve the early Arts and ancient Lore handed down by the vanishing races of Mankind.

¶ To promote a knowledge of Humanity and to disseminate that knowledge by lectures, by publications, by cooperation with the schools and through the medium of the University; to illustrate the unity of all races and the diversity of their Art, to inculcate a better and more sympathetic understanding of all peoples and to afford a just measure of the contribution that each has made to Civilization.

¶ By bringing the people into direct contact with the visible Past and its prolific life, to exert a civilizing and humanizing influence upon our manners and habits of thought.

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THE WALLS OF CONSTANTINOPLE

A Lecture Delivered at the University Museum on Nov. 26, 1921

By G. B. GORDON

THERE are two ways of reaching Constantinople at present. One is by the Orient Express, leaving Paris and passing by way of the Simplon Tunnel, Trieste, Belgrade, Sofia. The other route is by sea, through the Mediterranean and up the Aegean, through the Dardanelles, and across the Sea of Marmora. I went down by rail, five days and nights from Paris and after three weeks in Constantinople, I came back by sea. The first view that I had of Constantinople was at very close quarters when I emerged from the railroad station. One who goes by sea, on the other hand, has a magnificent first view of the city from the deck of the steamer on the Sea of Marmora. This view I reserved for my leave taking.

To understand Constantinople, it is necessary to mark well its geographical position, the most advantageous in the whole world. That position is the key to its history, and its fate rests today, as it has always rested in the past, on that supreme circumstance of position. From its splendid harbor of the Golden Horn, its ships have two pathways north and south. One is the Bosphorus, leading to the Black Sea and the richest granaries of the world. The other leads through the Dardanelles to the Mediterranean and to all the Seven Seas. Both straits are so narrow that they can easily be defended against the strongest navies, a fact which was clearly demonstrated during the last war. All around Constantinople lie wide productive areas to furnish supplies and provide a field of political influence. By sea and by land, it lies at the meeting place of great highways, east, west, north, and south. The situation is also distinguished as the most beautiful site occupied by any city in the world.

Ancient Byzantium occupied the triangular peninsula between the Sea of Marmora and the Golden Horn. That is the principal



The Mosque of Achmet, occupying part of the site of the Hippodrome.
Photo by G. B. G.

part of Constantinople still and it is called by the Turks Stamboul. On the other side of the Golden Horn is Galata and Pera, the modern part of the city. On the Asiatic side of the Bosphorus is Scutari. The Bosphorus is twenty miles long and scarcely half a mile wide at its narrowest parts. A strong current flows out from the Black Sea to the Sea of Marmora. The salt waters of the Bosphorus penetrate a distance of four and a half miles into the Golden Horn which at its western end receives The Sweet Waters of Europe.

The name Bosphorus recalls the mythical origin of Byzantium. Zeus was being agreeably entertained by the lovely lady Io till Hera, the wife of Zeus, took a hand in the matter and pursued her victim with such relentless spite that the unfortunate fugitive found no rest till she arrived at the strait that divides Europe from Asia. There Io, being brought to bay, was nearly caught, but Zeus intervened at the last moment and transforming the lady into a cow, sent her swimming across to Europe where she was safe from her pursuer. Therefore, the strait was called Bosphorus, which means The Cow's Crossing, or The Cow's Ford. One modern guide book, written by a woman, contains the information that Bosphorus means the same thing as Oxford. Of course the good woman is perfectly right except that an ox is not a cow.

Here on the banks of the Golden Horn, Io gave birth to a daughter who, in course of time, had a son Byzas, whose father was Neptune and who, at his birth, was nursed by a Sea Nymph. Byzas founded the city which was called after him and became Byzantium's first king. Historians reject the genealogy of Byzas but admit that there was a king of that name and they give his date as about 800 B. C.

From that earliest date to this day, the history of the City divides itself sharply into three distinct periods. The first runs from the earliest antiquity to the year 330 A. D. when Constantine made it his capital and consecrated it a Christian city. The second period runs from 330 A.D. to 1453 when it was taken by the Ottoman Turks and made the Ottoman capital, the chief city of the Mohammedan world. The third period began in 1453 and ended in 1918 when the Allied Powers took possession. The first of these three periods may be called the Pagan Period; the second is the Christian or Mediaeval Period; and the third, the Mohammedan or Ottoman Period.

Of the early Pagan city, nothing remains above ground, but its history is a most moving story. Even in those early days it was



The Dome of Saint Sophia.
Photo by G. B. G.

surrounded by strong walls that withstood many a siege. Philip of Macedon besieged it unsuccessfully for two years and on one dark and stormy night, he made a final effort to carry the defenses by surprise. Suddenly, the clouds were torn apart, the moon burst through, the garrison on the walls saw the movements of the enemy and the city was saved. To commemorate this deliverance, for which they gave credit to the moon goddess Hecate, the Byzantines erected a great statue of that divinity and on their coins they placed her symbol, the crescent and star. This device was adopted by the Ottoman conquerors in 1453 and it remains at this day on the flag of the Turkish Empire. Another device that may be seen on ancient Byzantine coins is the cow that represents the lady Io.

In the first century of our era, Byzantium got into trouble with Imperial Rome. She was helping Niger against Septimius Severus and the successful candidate for the Imperial throne led the forces of the Roman Empire against the city on the Bosphorus. During a three years' siege, the Byzantines made a defense that is one of the bravest in all history. When at last the city fell into his hands, Septimius destroyed it and pulled down its walls. Then almost immediately he repented and started to rebuild Byzantium on a splendid scale. With a rapidity that is incredible today, the city rose from its ruins under the guiding genius of Septimius. Among other great works that the Emperor built was the Hippodrome which I will have occasion to describe, for it became intimately identified with the history of Constantinople in the second period. Septimius had not finished the Hippodrome when he was called away to Britain by a rebellion there. He never returned to Byzantium; in fact he never got away from Britain; the Irish question or something remained unsettled and Septimius, one of the very greatest of all the Roman Emperors, died and was buried at York in the year 211. The work of rebuilding Byzantium was then suspended for a hundred years.

Then, once more, in the year 323 A. D., Byzantium backed the wrong horse. The Byzantines supported Lycinius in his struggle with Constantine for the throne. Lycinius took refuge in Byzantium and when that city fell to Constantine, its conqueror became sole master of the reunited Roman Empire. Then Constantine decided to make the city on the Bosphorus the capital of the Roman world. He determined moreover to make Christianity the State Religion and on May 11th in the year 330, with great pomp and ceremony,



Entrance to the Castle of the Seven Towers.
Photo by G. B. G.

the new capital was consecrated to the service of Christ. Eleven hundred and twenty three years later, there was another ceremony of consecration; this time the city was consecrated to the service of Mohammed. That interval of eleven hundred and twenty three years coincides almost exactly with what are called the Middle Ages and it is doubtful if history can furnish a parallel to the service that Constantinople rendered to civilization during this Millennium of its glory. During that period, all the Powers of Western Europe were born and grew to maturity. During that period of their childhood and minority, Constantinople was their guardian and the keeper of civilization on their behalf. When Constantinople fell at last, the Powers of Western Europe had grown to manhood and were able to defend themselves.

Constantine's magnificent methods would be called extravagant today. He renamed his capital New Rome and aspired to eclipse by its splendour the ancient city on the Tiber. He gave it new walls enclosing an enlarged area; he finished the Hippodrome and other great buildings begun by Septimius and he gathered into that city on the Bosphorus such treasures of art as the world had never and has not yet seen assembled. From Greece and her Isles, from Egypt, Syria, Spain, Italy, from Rome itself, Civilization sent its tribute and poured its hoarded wealth to deck the newly risen Queen.

It must be borne in mind that during the whole of its first period, beginning about 800 B. C. and ending in 330 A. D., Byzantium was a Greek city, entirely independent and self contained. It could remain aloof in its splendid isolation or it could make alliances at will and at one time it was an ally of Rome itself. With the advent of Constantine, the change was as portentous as it was abrupt. The independent city of antiquity was welded into the fabric of the Roman State, it became the Capital of that State, it became Christian, and it became Romanized. Then began that long succession of the Eastern Emperors during which period Constantinople was wicked, cruel, profligate and effeminate. It was given to turmoil and dissension; its rulers were often weak and vicious. On the other hand, Constantinople, during that same period was heroic to a degree almost without parallel in history. Though beset on every side by formidable and barbarous foes, only once was that brave city forced to yield.

Of the wonderful baths, forums, palaces, and churches built by Constantine, very little remains above ground. Of the great Hippo-



The Castle of Roumeli Hissar on the Bosphorus.
Photo by G. B. G.

drome, nothing can be seen today except three monuments with bases buried in the refuse of centuries. As this Hippodrome was the centre about which the life of the Imperial city revolved, we must get an idea of what it was like.

It was fourteen hundred feet long and four hundred feet wide. One end was semicircular forming the Sphendone; the other end was enclosed by a pillared and colonnaded structure in three stories. The lower story had stalls for horses and chariots, storerooms for all kinds of equipment, and quarters for the attendants. The second story contained a royal suite of apartments for the Emperor, together with a row of boxes for the court officials. The third story consisted of twenty marble pillars, supporting a platform or tribunal on the front of which was the Emperor's box with a golden throne. The other three sides of the Hippodrome were enclosed by the marble seats that rose tier on tier to the broad promenade forty five feet above. The seats would hold not less than one hundred thousand people. When the standing room was taken one hundred and fifty thousand people could find ample accommodation. The Hippodrome was used for the races, games, pageants, and for public meetings and demonstrations of all kinds.

Along the axis of the arena was the Spina, a thick wall four feet high with a flat top. On the Spina was displayed a wonderful collection of masterpieces in marble and bronze from all the ancient world, and in fact the whole of the Hippodrome was adorned with antique and contemporary statues and groups of sculpture and their number ran into the thousands. Four great gates gave access to the arena; the gate of the Blues, the gate of the Greens and two others without names.

In Constantinople, the populace was divided into two parties or factions, the Blues and the Greens, so called because of the colors which they wore as distinguishing badges. The Blues were the conservatives. The Greens were the radicals, the agitators, the reformers, and the trouble makers generally. There was no electioneering and there were no ballot boxes, but the rival parties had their own means of showing their convictions and expressing their sentiments toward each other. Each party was thoroughly organized, with its chief, its petty officials, and its clubs. In the Hippodrome, they sat on opposite sides of the arena, the Blues occupying the side to the Emperor's right and the Greens the side on his left. Athletes, performing bears, horses, chariots, and charioteers were either Blue



Entrance to the Castle of Roumeli Hissar.
Photo by G. B. G.

or Green; that is to say, they belonged either to one party or to the other, which gave additional zest to the performance. The races became contests between the rival factions. When one side applauded, the other hissed. When one side laughed, the other groaned. Sometimes when feeling ran very high, both sides leapt into the arena, met in the middle, and left their dead on the ground before the Imperial Guard could get their swords between.

Of all the manifold and varied scenes that were witnessed in the Hippodrome during a thousand years: the gorgeous pageants, the heated contests, the fierce demonstrations, all the tumultuous human tragedy and comedy, I will recall five incidents to illustrate life in the Imperial City. Once the bearkeeper of the Greens died suddenly and left a sick wife and three little girls unprovided for. A day comes when the annual races are to be held. The Hippodrome is packed, the Emperor has taken his place, the races are about to begin. Through the gate of the Greens, come three little girls, aged three, five, and seven; they pass along below the seats of the Greens, the side to which their father, the dead bearkeeper, had belonged; they are greeted with taunts and jeers; they hear no word of sympathy; they see no sign of pity. Yet, with piteous frightened faces, they pass along appealing on behalf of their sick mother for charity. A hundred and fifty thousand people watch their timid and bewildered progress. The races wait on the three little girls. The Greens feeling themselves affronted, become more noisy and insulting and order the children out. Weeping bitterly and holding hands they start to make their way back. Meantime, the Blues on the opposite side of the arena have watched this scene in silence. Now they begin to take a part. Loudly they call to the girls to come across to their side. Gently they coax them over and as the frightened children approach, they are showered with gold from the benches of the Blues. Men leap down to help them gather up the coins and still the golden shower comes down. Finally, loaded with gifts, the children are conducted to the gate of the Blues and carried home to their mother.

From that day forward, there was one little girl in Constantinople who knew exactly what she wanted and also how to get it. Her name was Theodora and when she became the wife of Justinian and Empress of the World, she remembered that day in the Hippodrome and she paid the Greens in full measure for what she and her sisters had suffered then. They were firmly and vigorously suppressed, and for many a long day the visibility of the Green was very low indeed



The Aqueduct of Valens.
Photo by G. B. G.

in the capital of the Roman Empire. Not so bad for a little girl of seven and a beggar girl at that.

In the meantime, however, the Hippodrome witnessed a scene of another kind. In the early days of Justinian, the two factions came into violent conflict and for five days fighting went on in the streets. Then the two parties suddenly decided to come together, and to compromise their differences they agreed to depose the Emperor Justinian and choose another acceptable to both sides. They all went to the Hippodrome, there to give effect to their decisions. On that day the Hippodrome was packed by the noisy mob of united Blues and Greens bent on having their way and feeling themselves complete masters of the situation. Then Belisarius, commander in chief of the army, divided his small force into three parts. One of his divisions he gave in command to Mundus, and sent him to the gate of the Greens. The second, he placed under Narses and sent him to a second gate. He himself, commanding the third division, went to the gate of the Blues. Being merciful, he left the fourth gate free as a way of escape for the crowd within. As Belisarius appeared at the head of his column inside the gate of the Blues, Mundus led his column through the gate of the Greens, and Narses led his column through the third gate. The unarmed mob of some hundred and fifty thousand men struggling to escape by the fourth gate were then taken in hand by the three armed columns and when that day's work was done, thirty thousand dead men lay within the Hippodrome. Justinian kept his throne and reigned with Theodora by his side for thirty eight years. They were years of profound peace and great prosperity for Constantinople. Everybody attended strictly to his business.

After that day when Belisarius and his two generals cleared the Hippodrome, it was in such a mess that it was not used again for two years. Meantime Belisarius was in North Africa, where in a victorious campaign he destroyed the Vandal Kingdom. Now he was coming home bringing the captive Vandal king and a wonderful captured treasure.

Again the Hippodrome was packed to its utmost capacity. The Emperor Justinian, robed and crowned, sat on his golden throne. Through the gate of the Blues came the long procession, Belisarius, in full armour and carrying his sword, walking in front, having refused to ride in the triumphal car drawn by four white horses as was customary, for he was modest as well as merciful. After him came his



The Land Walls of Constantinople, looking north.
Photo by G. B. G.

veterans fresh from battles that made the world's history and after them came Gelimer, the captive Vandal king. Then came the captured treasure—the massive golden throne of the Vandal king, his crown, his chariot, hampers full of gold and silver and precious stones. Among that treasure was the sevenbranched golden candlestick and the golden vessels that had been taken from the Temple in Jerusalem to Rome by Titus four hundred and eighty years before and captured by the Vandals in their sack of Rome and now recaptured by Belisarius from the Vandals. It was a magnificent and a moving spectacle that was seen that day in the Hippodrome.

Let us go forward from that day six hundred and fifty years to the year 1204. The Fourth Crusade, ostensibly on its way to Palestine arrives at Constantinople, the Christian capital of the world. The city is fabulously rich. The Crusaders decide to take and plunder it. Constantinople is unprepared for the treacherous assault and the reigning emperor is a weak and foolish man. The Christian capital for the first time is captured and sacked; the palaces are spoiled; the Hippodrome is stripped of its priceless collections of art; the bronzes are melted down; the marbles are broken up; the whole Hippodrome becomes a ruin. Saint Sophia is filled by day and by night with scenes of revelry and lust. The greatest and richest church in the world is stripped of its treasures; the great golden altar is broken up and carried away with the golden ornaments and vessels; the sevenbranched golden candlestick and gold vessels captured by Belisarius six hundred and fifty years before and taken by Titus from Jerusalem eleven hundred years before, are stolen with the rest and all this golden loot is loaded on a ship and despatched to Venice.

The ship that carried the Crusaders' loot from the Golden Horn was lost in a storm at sea and went down in the Mediterranean with all its treasure, and there it lies safe in Davy Jones's locker.

The sack of Constantinople took place in 1204 and the city never recovered from the blow. Never again was the Hippodrome used, except as I shall mention, for it remained a gutted ruin. Two hundred and forty nine years have passed. The Empire has dwindled till nothing is left but the Capital itself. It is the year 1453. The Ottoman Turks to the number of three hundred thousand cross the Bosphorus and draw up before the walls. Within those walls, the Emperor Constantine XIII is able to muster seven thousand men to defend the city against three hundred thousand. On May 20,

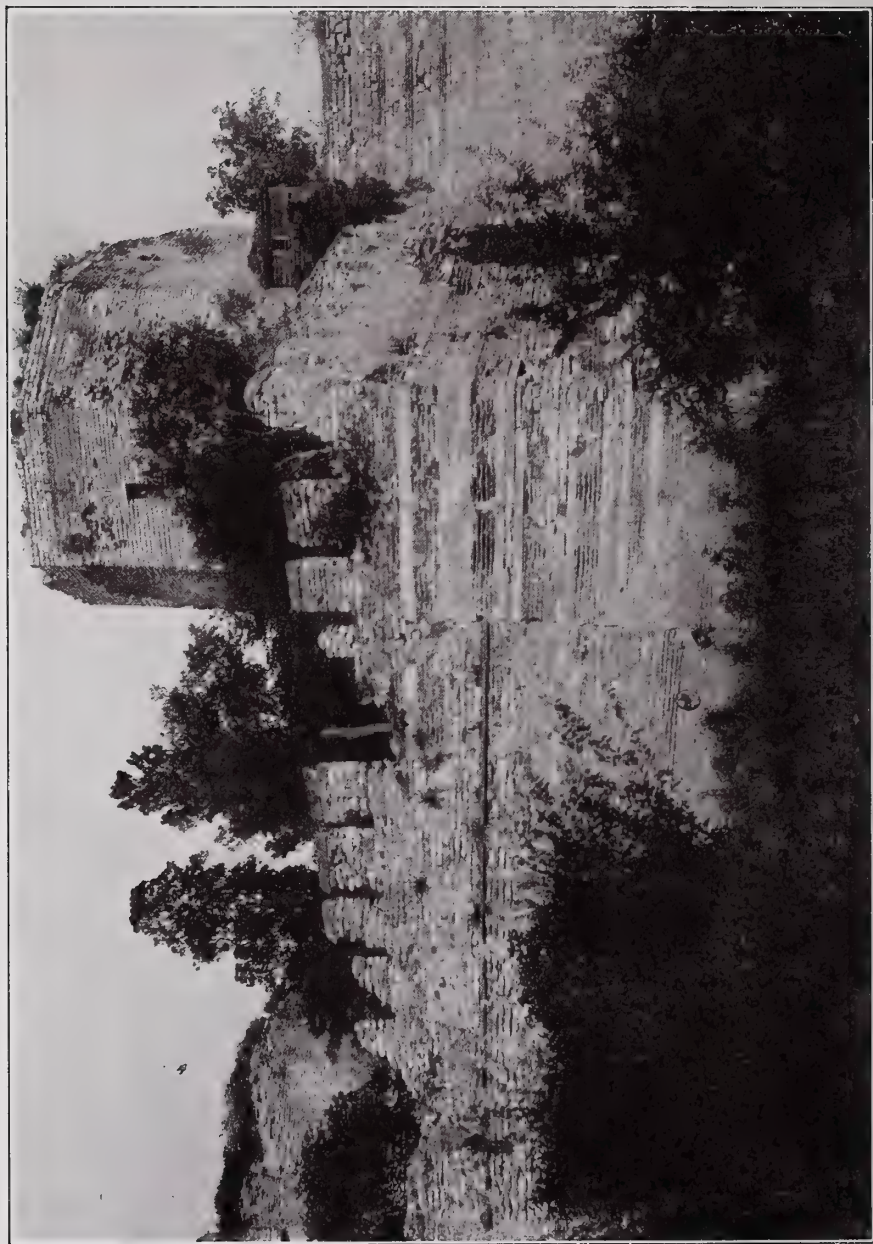


The Land Walls of Constantinople, looking north.
Photo by G. B. G.

1453, Mohammed the Ottoman leader, caused it to be made known within the city that he was going to make his supreme assault at dawn on the morning of May 29th. At midnight on the twenty-eighth of May, Constantine went to Mass in Saint Sophia, the last time that Mass was ever celebrated there. From Saint Sophia, he went to the ruined Hippodrome and there, an hour after midnight, he addressed himself to his soldiers. He begged that if he had ever offended any man he might be forgiven. He made no promises. He did not speak of victory. He simply asked every man to go with him on the walls and die fighting in the morning. The old chronicler says that the soldiers wept when they heard their Emperor's words. But not a man faltered; no one failed him and before another sun had set Constantine XIII and his seven thousand had died fighting on the walls and Mohammed II entered Constantinople in triumph and proclaimed Mohammed the Prophet in the Church of Saint Sophia. It was the 29th day of May in the year 1453.

The Ottoman Turk is still in Constantinople. The Hippodrome has almost disappeared. Saint Sophia is still a mosque. The Turk has been a troublesome tenant in the palace of the Cæsars and it is hard enough to say any good word for him, but it behooves all good Christians to remember that it was not the Turk that destroyed Constantinople. It was the Crusader that destroyed Constantinople, two hundred and forty nine years before the conquest by Mohammed II.

The site of the Hippodrome is today in part a large open space called the Atmeidan and part of it is occupied by the great mosque of Achmet. The ground level is now twelve feet above the floor of the arena. Three monuments still standing on the buried Spina mark its position. Here is the Egyptian obelisk, here the serpents of Delphi, and here the Built Column. The Egyptian obelisk stands where it did, marking the centre of the arena. This shaft of red granite was first erected on the banks of the Nile by Pharaoh Thothmes III two thousand years B. C. It was brought to Constantinople by Constantine the Great, and by Theodosius II it was erected on the top of the Spina in the center of the Hippodrome. So far as I am aware this obelisk is the oldest thing to be seen today in Constantinople. Untouched by the tooth of Time and standing like a lance in rest, indifferent, scornful, contemptuous, says he: "I look back on forty centuries as you reckon time. That son of Zeus and Io that laid the first stone beside the Golden Horn is an infant as compared



The Land Walls of Constantinople. One of the 96 towers between the Sea of Marmora and the Golden Horn.

Photo by G. B. G.

with me. I saw the first Phœnician galley launched when Tyre was a fishing village. I can remember the sack of Troy as if it happened yesterday. I knew Joseph and his brethren. I saw Moses turn the Nile water into blood, a trick I had seen a hundred times before. I saw Hellas rise and Rome fall. And now I hear a noise of upstart nations scrapping their nutshell navies. They don't know where they are going but they are on their way. I know where they are going and I'll be here long after they arrive."

In line with the obelisk on the axis of the arena a slender twisted bronze pillar rises up out of the earth in which an excavation has been made to reveal the base on which it stands on top of the Spina. You may look well at this twisted pillar of bronze, for even if you are not a worshipper of relics, it will not fail to claim your veneration. It represents three serpents twisted about each other. Their heads, now broken off, were spread apart and supported a tripod of solid gold. This serpent column stood originally in the Temple of Apollo at Delphi where it was placed by the Greeks as an offering to the god after their victory over the Persians to commemorate the battle of Plataea. On the coils, you can still make out the names in Greek letters of the Greek cities that took part in the victory and that joined in setting up this monument in their most sacred shrine at Delphi. Constantine brought it to Constantinople in 330 and set it up in the Hippodrome exactly where we see it. The gold tripod was carried away by the Crusaders and the three heads of the serpents have been broken off. One of them may be seen in the Imperial Ottoman Museum.

Farther to the south on the same axis and also raised on the Spina, is a bare column built up of blocks of stone. It was built by Constantine IV as a memorial to his mother and it was covered on the outside from top to bottom with plates of brass, which were stripped off and melted down by the Crusaders. It is the most pathetic object in Constantinople. Though less ancient than Pharaoh's obelisk by 2500 years, it strikes a very different note, where it stands in its naked decrepitude, with its piteous protest against this sorry scheme of things.

We are in Venice for a moment. Above the portals of Saint Mark's stand the four colossal horses "shining in their golden strength." These horses were made by some Greek artist and erected on some building in Greece about the fourth century B. C. They were carried from Greece to Rome by one of the Cæsars to



The Land Walls of Constantinople. One of the 96 towers between the Sea of Marmora and the Golden Horn.

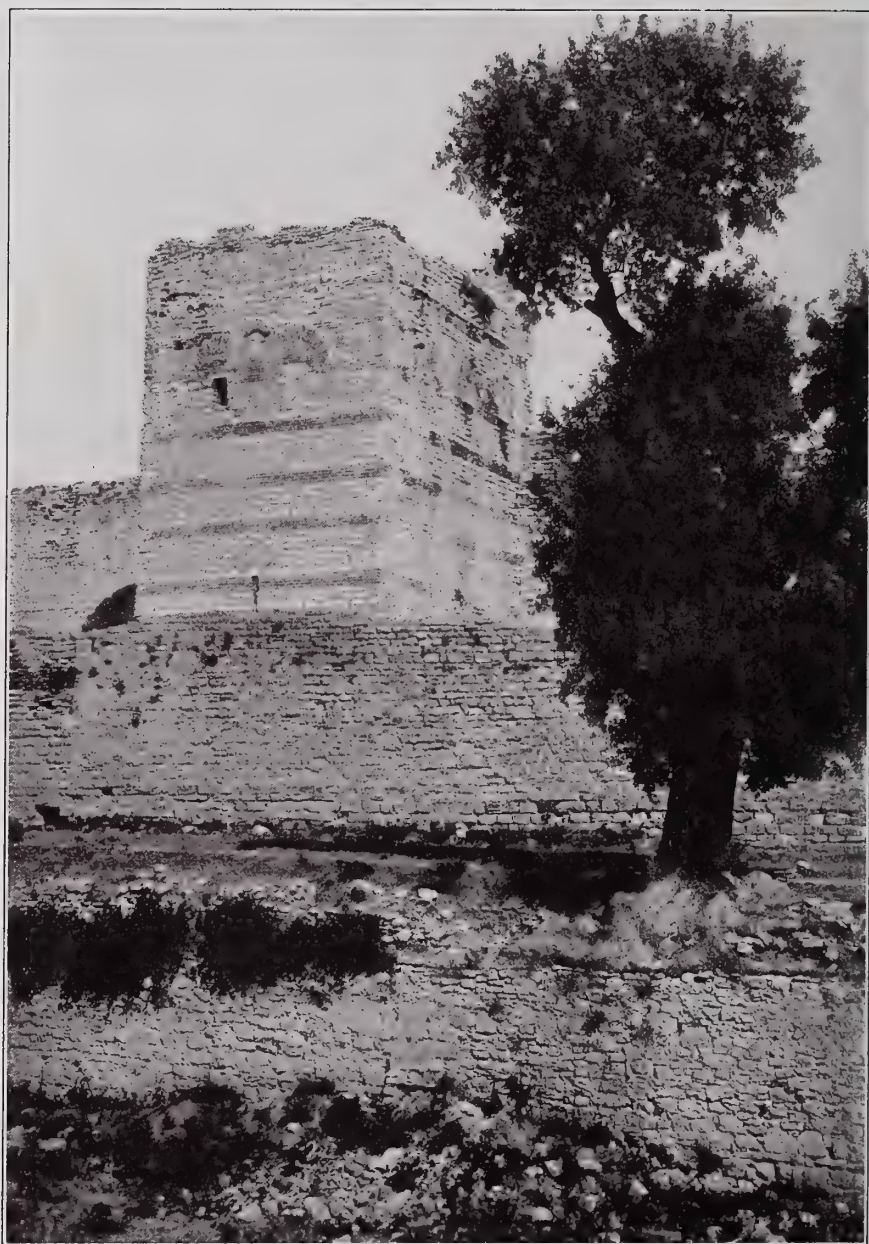
Photo by G. B. G.

adorn the square in front of the Senate. From Rome they were carried by Constantine to the new capital on the Bosphorus and set up on the Hippodrome. From the Hippodrome, they were carried in 1204 to Venice by the Crusaders. Napoleon carried them away to Paris but in 1815 they were returned to Venice. During the late war when an attack on Venice seemed imminent they were removed to Naples for greater safety. Since the Armistice they have been taken back and replaced on their pedestals. These horses have not yet seen Chicago, but then time is nothing to them. They can wait.

In another part of Stamboul, rises a battered column bound together with iron hoops to keep it from falling. This is called the Constantine's Column erected in one of the principal forums by the first Emperor at his consecration of the City. The eight porphyry drums of the shaft were brought from Rome and, in the pedestal beneath, Constantine placed the following objects: Mary Magdalen's alabaster box, the crosses of the two thieves, Noah's adze and the Palladium of Rome—the very things that any industrious collector today might acquire by a visit to a reliable dealer in Jerusalem or on Fifth Avenue. On account of these sacred relics under its base, the column was believed to work miracles and it was regarded with the greatest veneration. On top of the column, Constantine placed a bronze statue of Apollo, the work of Phidias, taken from Athens, and the public was allowed to believe that this statue represented Constantine himself.

Another antiquity is the Aqueduct of Valens, erected by that emperor about 370 and often repaired. It is a huge and impressive structure cutting through the heart of Stamboul and rising to a height of seventy feet with its twenty feet of thickness.

The ancient underground cisterns are among the most astonishing sights in Constantinople, or rather, beneath Constantinople, for the city is built over them. More than twenty of these cisterns are known. One of the largest and most remarkable is called by the Turks, The Hall of a Thousand and One Columns. These columns stand in sixteen rows and each column is built in three sections fitted into each other by means of sockets. In some mysterious way, this reservoir has become more than half filled with earth. You see only the upper section of each column and a part of the middle section; all the rest of the middle section and all of the lower section is buried. Underneath all that earth, the floor of the cistern is made of cement



The Land Walls of Constantinople showing the moat in the foreground and one of the 96 towers of the Inner Wall.

Photo by G. B. G.

and the height from that floor to the brick arches is sixty feet. It was built in Constantine's time by engineers from Rome. The purpose of the cisterns was to store water for use in time of siege and they were never empty.

Constantinople was a city full of churches for Church and State were closely united. Some of these churches are still standing, most of them converted into mosques. Just inside the city wall, on the west, stands the Church of Chora. Its single minaret shows that it is now a mosque. This little church was built a hundred years before the time of Constantine when Byzantium was still a Pagan city. It was built far outside the walls as they then stood. Hence, it is named Chora which means in the country, just as they have in London Saint Martin in the Fields. Many centuries later when Theodosius II enlarged the city, the little church of Chora was enclosed within the new and mighty ramparts of the Imperial city. In outside appearance, the Chora is small and unimpressive. Inside, it is supremely beautiful. The walls of the sanctuary itself have been plastered over by the Mohammedans, but contrary to custom they have left exposed the wonderful mosaics of the narthax and the exonarthax. All of the interior of this wonderful church was encrusted with pictures in mosaic and those which remain uncovered present a continuous succession of the most exquisite fantasies wrought in Byzantine mosaic by consummate artists. Glowing with color, these ancient walls greet you as you enter with a message of beauty from sixteen hundred years ago. The masterful composition, the soft radiance of the colors, the faithful expression, and the fine workmanship reveal a degree of skill and of artistic feeling that is not equalled in any later ecclesiastical edifice that I know. The Church of Chora presents all the characteristic features of Byzantine architecture.

The objects that I have thus briefly described, together with the world renowned Church built by Justinian and called in English Saint Sophia, are the principal surviving remnants of the great city, of which the defences still defy the passage of time as they defied all other enemies during a thousand years.

Constantinople was completely encircled by walls. A sea wall ran along the Golden Horn and was continued around the end of the peninsula and along the Sea of Marmora. Here the sea wall still joins hands with the land wall which cuts across the peninsula from north to south for a distance of four and a half miles to the Golden Horn where it joins the sea wall on that side at a point called Aivan Serai. This



One of the 96 Towers of the Inner Wall, the Outer Wall and the Moat.

Photo by G. B. G.



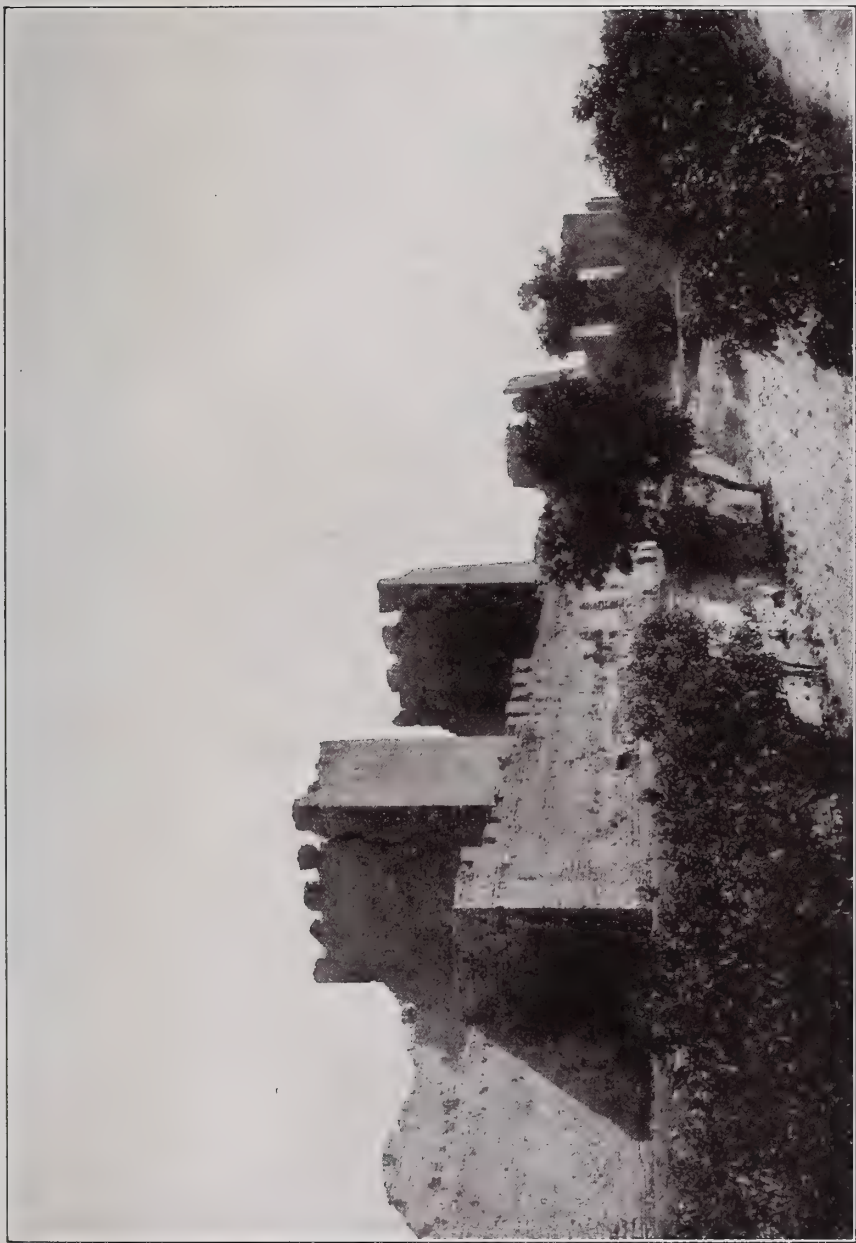
One of the 96 Towers of the Inner Wall, the Outer Wall and the Moat.
Photo by G. B. G.

land wall was the most important part of the city's defenses but there was still another defense worthy of mention. An iron chain stretched across the entrance of the Golden Horn, closed the harbor effectively against an enemy in time of war. A fragment of this chain is still preserved in the Imperial Ottoman Museum. Mohammed II, the Ottoman conqueror, was for a long time baffled by this chain for he believed that unless he had possession of the Golden Horn he could not take the city. He therefore made a shipway of planks from the Bosphorus over the hills to the Golden Horn, used a lot of grease and a great many rollers and hauled sixty eight ships over the hills and launched them in the Golden Horn.

Perhaps the best preserved bit of the sea wall is one that rises from the Sea of Marmora and is known as the Marble Tower, but it is the land wall that chiefly claims our interest. The land wall had seven gates looking west. Proceeding northward from the Sea of Marmora, the first gate you come to is that famous one called the Golden Gate. It is now walled up and it was never used at all except for ceremonial processions. It was by this gate that the emperors and their generals, returning with victorious banners from wars in defense of the Empire and of civilization, made their triumphal entry into the city on their way to the Hippodrome. There is nothing left to indicate the towering strength or the splendid adornment of the Golden Gate. The walls were covered with marble reliefs that were world famous and the summit was crowned with groups of statuary in gilt bronze.

After passing the Golden Gate, one sees the land wall stretching away into the distance with a long succession of towers, some of them square, some hexagonal, and some octagonal. Presently, one becomes aware that there are two walls, an inner and an outer, running parallel to each other, and also that there is a moat. These walls were built by Theodosius II in the fifth century, with the exception of a short piece at the north end where the Theodosian wall was replaced by Heraclius to enclose a new district beside the Golden Horn. The city of Constantine had grown so fast that it was already overcrowded in the fifth century and the land walls had to be rebuilt a mile farther out.

The building of the inner wall was the first great work undertaken by Theodosius after he came to the throne. This wall was hardly more than finished when a severe earthquake threw it down in 447. The emperor started immediately to rebuild it and at the same time,



The Land Walls of Constantinople, looking south.

Photo by G. B. G.

decided to add the outer wall and the moat. The inner wall consists of a succession of ninety six towers united by a curtain wall. In the outer wall, there were a similar number of towers alternating with those of the inner wall and united in the same way by a lower curtain wall. In front of the outer wall was the moat. The towers of the inner wall are seventy feet high and forty feet thick. The curtain wall running between these towers is thirty five feet high and sixteen feet thick. The space between the inner and outer wall is fifty two feet wide. Between the outer wall and the moat is a space of sixty feet. The moat itself is sixty feet wide and thirty feet deep. There was an ingenious system of aqueducts that kept the moat supplied with water. The towers and the curtain walls are built of concrete faced with blocks of limestone. At intervals there are several courses of brick that run right through the structure and bind it together in a solid mass. On the tops of the towers the sentinels stood and in time of war the engines for throwing stones and Greek fire were placed upon the towers. The total thickness of these defenses is two hundred and seven feet and the height from the bottom of the moat to the top of the towers is over one hundred feet. The length of the land wall is four and a half miles. This Heracleian wall at the northern end is single and without a moat but its huge towers give an impression of great strength.

Day and night for a thousand years, the watchmen stood on these ninety six towers of the landward walls looking to the west and night after night, for a thousand years, these sleepless watchers sent forth the call "All's well." Night after night, for a thousand years, and every hour of the night, that call was taken up by the sentinel on the tower at the Sea of Marmora and it ran along from tower to tower of all the ninety six towers till it reached the Golden Horn. The only time during eleven hundred years when these towers were silent, the only time when the walls were taken by an enemy, was in 1204 when they yielded to treachery and let in the spoilers of the Fourth Crusade. They resisted successfully every other attack. From every point of the compass and from the half-points and quarterpoints, the barbarians kept rolling up against these ramparts. Wave after wave came thundering on with devastation in its wake. Avars, Germans, Huns, Goths, Vandals, Bulgars, Slavs, Persians, Saracens, Tartars, Turks flung themselves in furious succession against these bulwarks and for a thousand years each successive wave was halted and rolled back. The racing tide that



A Tower of the Heracleian Wall, the northern end of the Land Wall.
Photo by G. B. G.

overwhelmed Imperial Rome got no farther than this wall. This was the rock on which it broke.

The end so long delayed came on at last. I have told you how Constantine XIII and his garrison of seven thousand defended the city against the Ottoman Turks. On this very wall the defenders died. On this very wall the last of the Cæsars fell sword in hand, claiming for his sepulchre the stateliest of cities and for his winding sheet the most gorgeous fabric ever woven by the loom of Time or by the dreams of men, the mantle of the Roman Empire.

Nothing in Constantinople impressed me like these western walls; not the wonderful view of Stamboul from the Tower of Galata; not the amazing modern city with its mosques, its khans, its bazaars, its baths and its myriad population of all races and all creeds; not the marvellous view from the Giant's Grave, whence like Childe Harold, I saw "the dark Euxine rolled above the blue Symplegades"; not the spacious and lamenting void of the Hippodrome, not Saint Sophia. Nothing, in short, held my imagination and dominated the horizon of my thought like these brave old bastions, these invincible walls.

When I surveyed the scene for the last time, I was tempted to linger far into the night, and there, amid a dead and silent world, in those still watches, a murmur ran along the battlements. It may have been the wind or it may have been the owl, but I knew perfectly well that it was not the wind and that it was not the owl, but the call and countercall of ghostly sentineis on the ghostly towers: "All's well " "All's well."

DRESS AMONG PLAINS INDIAN WOMEN

THE culture of the Plains Indians was characterized by a lack of practically everything we today consider essential in the life of any people and yet, in the minds of most of us, they were the typical Indians of America. We see them in imagination all clad in buckskin and feathers.

The limits of this culture coincided with the wanderings of the buffalo which covered that great territory stretching from the Mississippi to the Western mountains and from the Gulf far into Canada. Around the borders of this area the culture was modified by contact but the characteristics of the central tribes extended to the limits described. Within this area there are some thirty tribes, representatives of five different linguistic stocks. Named from north to south some of the most typical tribes are: the Cree, Blackfoot, Assiniboine, Crow, Dakota, Arapaho, Kiowa and Comanche. The common traits of customs are due to the fact that the buffalo entered so largely into the material and religious life of the people.

It is not the place here to enter into a detailed account of the whole culture; suffice it to state that there was no permanent home, no canoe for transportation or travel, no practice of agriculture, no weaving of cloth for clothing, no pottery for cooking purposes, no basketry and no fish, fruits, seeds or berries in their dietary. The reader is ready to exclaim, "Then what on earth had they?" and the answer is, "All that the buffalo could offer." His hide furnished the material for tipis, clothing and harnesses; his flesh was the whole food supply; his movements controlled the social organization and this dependence developed myth, ritual and religion.

The people were told in the beginning how to dress, paint their faces and light their pipes. As there was no attempt to act the part played by spirits or supernatural animals there are no ceremonial costumes or masks which are so often met with among other tribes.

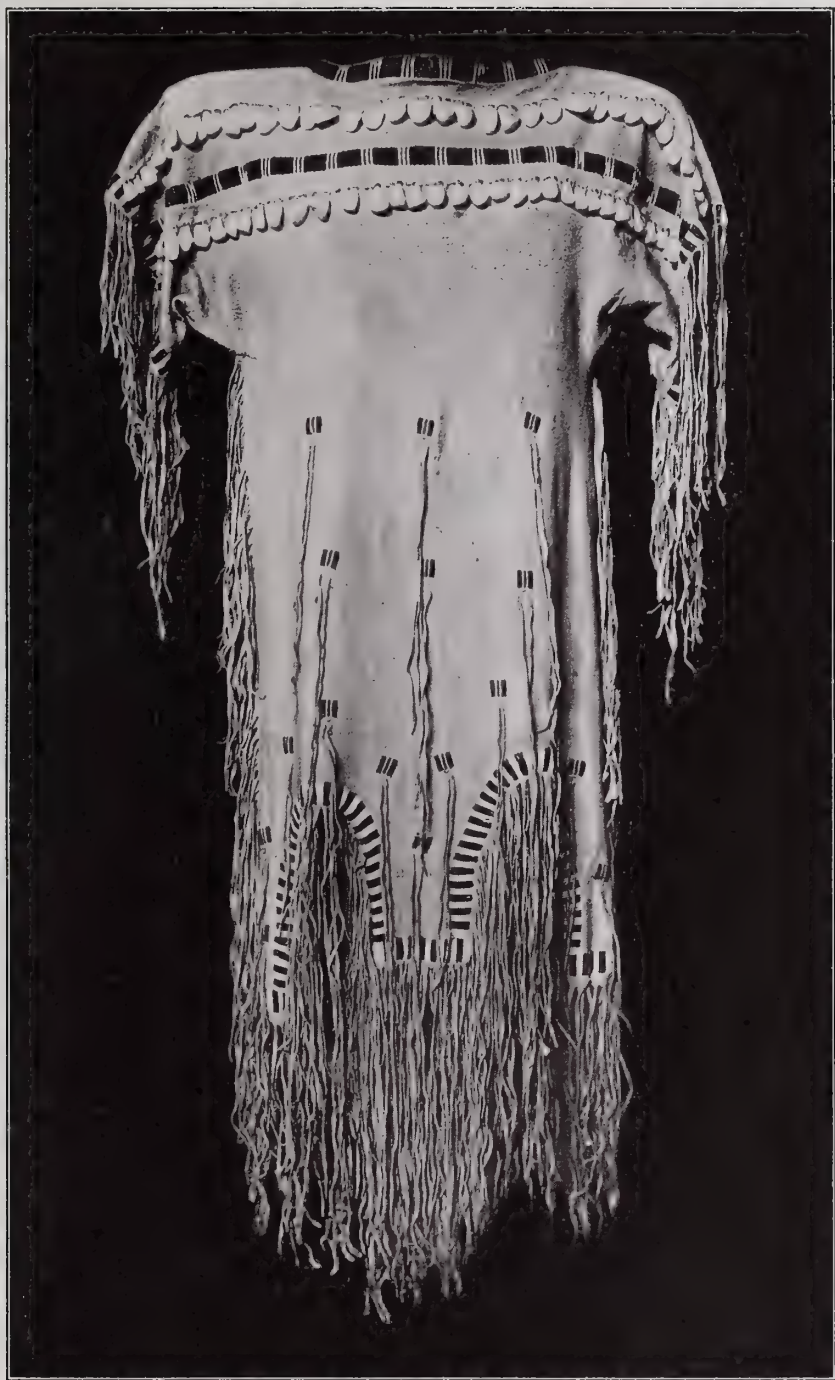
The home, or rather the temporary dwelling place, was the conical tent or tipi, made of a dozen poles covered with a dozen buffalo skins, which were tanned and made up by the women. All the paraphernalia and the type of shelter itself were adapted for ready transportation because the people were compelled to follow their food supply and it was on foot. The woman placed her packs on the litter, or travois, to which she harnessed her dog. She cooked

her food by dropping hot stones into the vessels of skin containing water. She used skins in place of woven cloth for making the wearing apparel for the household.

The worth of a woman was measured by her ability in the art of dressing and tailoring skins. She made her husband's clothing with even more care than her own and dressed him up in his finery as she would her child. She tanned the skins and embroidered them in beautiful designs with colored porcupine quills. She also gave a great deal of attention to her own dress and personal appearance.

By the time a girl is fifteen she has learned to dress skins and to make all kinds of wearing apparel from the fur robe to the rawhide moccasins. The methods used are much the same over the entire area. When robes are made the hair is not removed but other hides are put through the six stages of fleshing, scraping, braining, stripping, graining and working. To obtain the best results it is necessary to bleach the skins in the sun for a few days. The fleshing begins as soon as possible after the hide has been removed and staked out on the ground. The instrument used to scrape off the flesh and fat is a sort of gouge with serrated edge made from the leg bone of the buffalo. The hair is next removed with an adzlike tool made of elkhorn with a stone blade. The skin is now ready for the braining process in which brains, liver, grease and yucca root are boiled together and applied to the skin with a yucca brush. Then a bunch of dry grass saturated with hot water is thrown into the middle of the hide and the corners folded over, tied and the whole hung up to soak until the next day, when the stripping takes place. This consists in twisting the damp hide into a rope to remove as much moisture as possible, after which it is stretched in a frame and stripped with a stone blade set in a handle of bone by pressing the blade heavily against the skin and drawing it steadily from top to bottom. After all the moisture has been worked out the skin is left in the frame to bleach until it is ready to grain. The graining implement is cut from the spongy head of the humerus of a buffalo. With it the whole surface of the skin is rubbed over to reduce it to uniform thickness and smoothness. Then the final working renders the skin soft and pliable. Two women draw the skin back and forth around a tree or over a sinew rope tied between two trees, thus giving the skin its final softness. After all this it is washed with white chalk clay and brushed when dry.

The skin is now soft and white; if a darker color is desired it is obtained by smoking the skin over a slow fire for two or three hours.



Sioux Indian girl's dress.
Gift of Mrs. C. C. Harrison, Jr.
FIG. 71.

A hole is dug in the ground, a fire kindled and allowed to burn until a mass of coals have accumulated, then damp rotten wood is put on, causing a dense smoke in which the skin is held.

If a robe is to be made, the fur or hair is left on and the skin dressed by throwing it over a log, scraping it and rubbing it with a mixture of corn meal, eggs and water. When dry, the skin is worked over the rounded top of a post to soften it. When handling the large skins it is necessary for two women to work together. At best, skin dressing is a difficult and laborious job requiring skill, strength and patience.

When the skins were properly prepared the making of clothing must have been considered a pleasant occupation and one in which the women of the different tribes took great pride. While the general type of dress was much the same there were certain differences due to the presence in one community of certain fur bearing animals whose skins gave variety to the clothing. The Apsaroke were better dressed than any other of the northwestern tribes on this account. The modes of stitching, the methods of embroidering and the kinds of decoration served to distinguish tribe from tribe.

The one type of woman's dress peculiar to the whole plains area was a one piece garment reaching down to midway between the knee and ankle. It might be made of the skins of the deer, elk or mountain sheep, of one skin or two, with sleeves or without, with a folded over yoke or one joined to the skin, decorated with quills, elk teeth or fringe, but when completed it was all one piece with holes for the head and arms.

Among the Sioux generally the dress was made of two deer skins sewed together along the sides to the armholes, except when a woman had a nursing child the sewing stopped at the breast. The bottom was cut zigzag with a point at each side and one in the middle of the front and back. The side edges of one or both skins, and the bottom were fringed. The yoke was joined to the skin by overlacing the edge which was fringed or notched. The skirt was decorated at intervals with rows of double pendent thongs which were sometimes attached over bits of cloth or encircled with beads. Usually there were no sleeves; the heavy fringe of the extended yoke fell down over the shoulders and upper arms, but sometimes there was a sleeve reaching to the elbow sewed or tied at intervals on the under side. The sleeveless type was worn by the Crow, Blackfoot, Dakato, Arapaho, Assiniboine and Cree, while the Comanche, Kiowa and Ute

wore sleeves. Instead of the thongs, elk teeth might be used for decoration either in rows or thickly dotted from top to bottom, thus showing the wealth or standing of the family. No self respecting young man would marry unless he could furnish elk teeth for the bridal dress. The teeth were very expensive, one hundred being worth as much as a horse, yet several hundred, even as many as a thousand were sometimes sewed on one dress. The girl's dress in Fig. 71 contains about two hundred teeth.

The Hidatsa woman of North Dakota made her dress of two mountain sheep skins sewed edge to edge with the tails remaining on the skin, one on the breast and the other on the back. When a young man was married he took his bride to his parents' lodge, where he and his relatives presented her with a dress richly embroidered around the neck and over the shoulders with porcupine quill work, covered with elk teeth and fringed with rattles of deer hoofs, a belt, beaded moccasins, leggings and everything a woman needed in her household. Any woman who had a good garden and kept a clean lodge was entitled to wear a deerskin belt six inches wide decorated with feathers.

A number of variations from the type of dress are found here and there within the Plains area or around its borders. The Sahaptian make a true sleeve of the extension of the cape, the Cree have a detached sleeve, the Comanche and Kiowa use an open lowcut neck, the Arapaho and Cheyenne use a yoke with square cut cape extensions. The Dakota have a notched yoke, the Cree a folded over yoke and the southern tribes have a detached cape or large loose yoke. Some of the eastern Sioux and Algonkin tribes wore a skirt reaching below the knees which was nothing more than a single piece of buckskin open on one side. Over this they wore a skin cloak fastened over one shoulder or cut square with a hole for the head.

The Plains women wore leggings of deer or mountain sheep skins made to fit snugly, extending from the ankle to above the knee. They were slipped on like a stocking and tied top and bottom. Among some of the tribes the women decorate their leggings with beaded or painted designs to indicate their husbands' war honors. The Hidatsa paint their leggings with diagonal red and black stripes for this purpose. The Assiniboine, Cree, Hidatsa and Dakota wear a shorter legging reaching from the ankle to the knee.

With the exception of the Pacific coast people who went barefoot and some of the tribes along the Mexican border who wore sandals,



Cree Indian dress.
Gift of Miss Marjorie Watmough (Mrs. Edward F. Hoffman, Jr.).
FIG. 72.

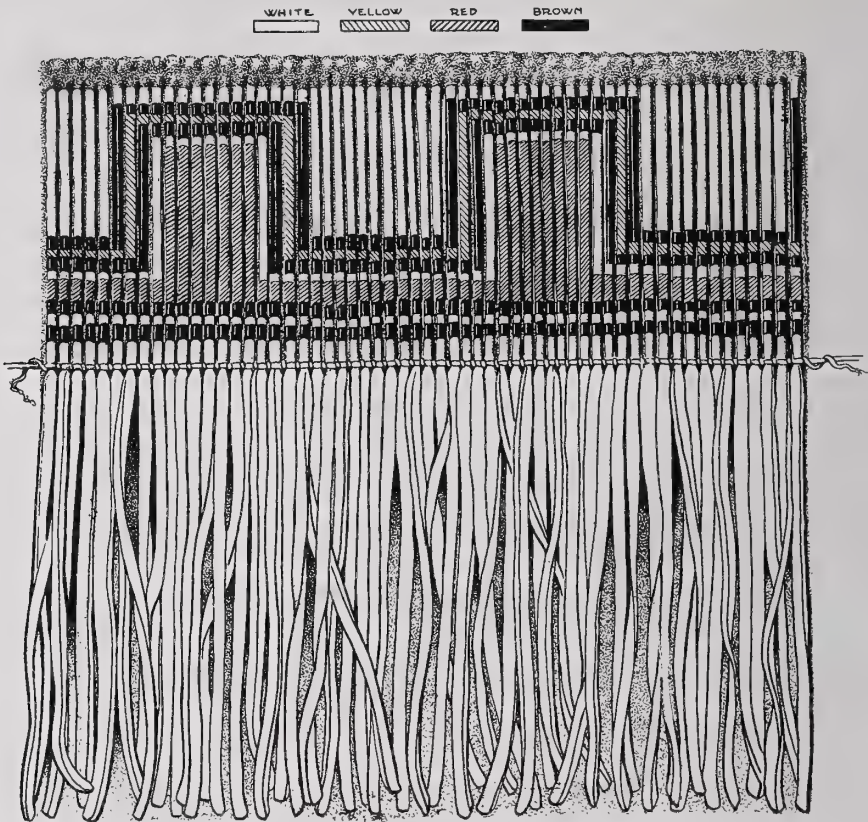
the Indian men of the United States and Canada wore moccasins, but in many tribes the women went barefoot. There were two general types of moccasins; in one the moccasin was made of a single piece of soft skin with a seam up the instep and at the heel, in the other a rawhide sole was sewed to the soft upper. The second is the type used by the Plains Indians because of the character of the trails they had to follow, The decoration of the moccasins in paint, quill and bead work presents a wide range of symbolism and serves to distinguish the different tribes.

The materials used for moccasins were the stiff rawhide cut to fit the foot for the soles, the soft tanned skin of any of the larger mammals for the uppers, sinew for sewing and a thong around the top for fastening to the foot. The sole was sewed to the upper turned wrong side out and when completed it was turned, thus protecting the stitches from direct wear. Ordinarily the moccasin was only ankle high but some tribes, like the Crow, sew an extension top to the upper. Some of the northern Sioux wear in winter an outer moccasin made of buffalo skin with the hair inside.

In cold weather the women wore over the dress an untrimmed buffalo robe well tanned with the hair on and ornamented from head to tail with painted bands and strips of quill work. At intervals along the band there were circles of embroidery. The finest robes were made from the hides of heifers killed at the beginning of winter. Hides from the older animals were too hard and stiff.

Women seldom wore head covering of any kind but they dressed their hair with great care. They brushed it daily with a porcupine tail brush and anointed it with perfume of pennyroyal, sweet grass, fir needles, skunk oil or musk of beaver. The hair was parted in the middle from the forehead to the neck and allowed to hang loosely over each shoulder, tied at the end with a thong; or it was worn in two long braids hanging in front of the shoulders and tied with a thong and ornament. The Cree in earlier times wore a knot behind each ear. Old women often allowed the hair to hang loose or confined with the head band. The part was painted yellow and called the pathway of the sun. The women sometimes tattooed small circles on their foreheads and perpendicular lines on the lower lip and chin. Their ears were usually perforated and adorned with pendants of buffalo bone or very long strings of shells. Massive breast ornaments made of pierced cylinders of buffalo bone were hung from the neck.

The nature of the life on the Plains gave the women much leisure and they delighted in making fine garments and embroidering them with quillwork. Not content with adorning themselves they bedecked their horses in gorgeous trappings. Women's saddles were made with high horns and ornamented with beads and quills while from each one was suspended a large embroidered pendant. The stirrups were covered with beaded skins. Behind the saddle



Showing details of fringe on the yoke in Fig. 72.

FIG. 73.

hung a pair of decorated saddle bags with fringes nearly sweeping the ground. There was also an elaborate crupper and an embroidered breast piece. The bridle was covered with beadwork and a decorated piece attached to the foretop hung half way down to the nose. No women in the world ever made a better appearance on horseback than did these beautifully dressed women of the Plains.

Of all the women's dresses those of the Plains Cree are among the most beautiful (Fig. 72). The whole dress with its turned

over yoke is made of one single piece of finely dressed elk skin. The dress is 4 ft. 4 in. long, 2 ft. 4 in. wide at the bottom and 1 ft. 8 in. at the waist. On the left side the edges of the skin are brought together and sewed through, leaving a long fringe to each edge. On the right, or folded side, the skin is cut from the waist to the top and sewed up 8 in. to the armhole. The two top pieces are folded over



Showing details of fringe over the left shoulder.

FIG. 74.

1 ft. 3 in. front and back to form a yoke. The dress was fastened over the shoulders with thongs and at the waist with a belt.

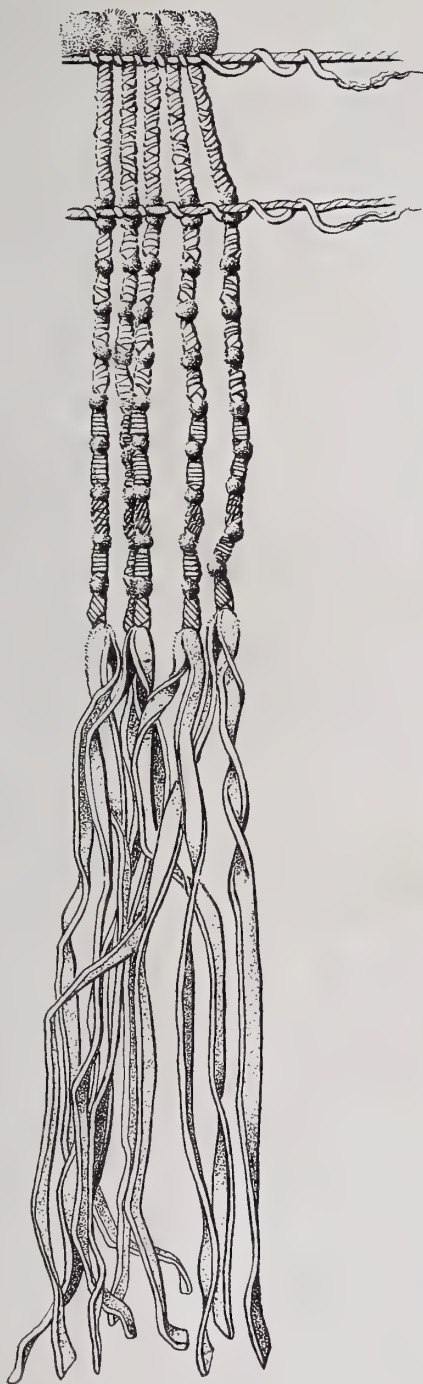
A fringe 4 in. wide runs around the bottom of the skirt and the thongs of the fringe are wrapped for $1\frac{1}{4}$ in. with porcupine quills. A fringe $8\frac{1}{2}$ in. wide sewed on the yoke 3 in. above the edge runs around from the left armhole in front under the right armhole to the left at the back. The separate thongs of the fringe are wrapped

from the top for $3\frac{1}{2}$ in. with white, yellow, red and brown porcupine quills forming the design shown in Fig. 73. The fringe on the left shoulder hangs down over the arm 12 in., or to the bottom of the yoke, in order to cover up the break in the yoke fringe under the arm. The thongs are wrapped with white, blue, yellow, red and brown quills for 2 in. and held in place by an interlacing of sinew and fiber; below this they were wrapped at intervals with single quills for $4\frac{1}{2}$ in. as seen in Fig. 74. The double ended fringe is made by sewing a narrow skin, also fringed, beneath the outside heading, wrapping the two thongs as one in continuous, then intermittent quilling, finally allowing the two ends to swing free. The fringe over the left shoulder was made in similar fashion but only 8 in. long, thus revealing the continuous fringe of the yoke. This sleeve is interlaced with sinew only and at the heading also. A part of the thong is cut away here, as under the arms also, causing greater separation (Fig. 75). The skirt was further ornamented with a line of looped thongs a foot long set two inches apart and reaching to the bottom of the fringe. One thong passed between three blue beads through the skin with a knot on the inside, the other was attached to this one with the first wrapping of quills, below, both were wrapped for three inches. A line of red paint passes between alternating pairs of thongs and below this line as well as on the yoke the skin is covered with blotches of dull red paint, leaving the rest of the dress in the natural color of the tanned skin.

This dress (Fig. 72) was presented to the Museum in 1912 by Miss Marjorie Watmough (Mrs. Edward F. Hoffman, Jr.) and the one illustrated in Fig. 71 was presented in 1910 by Mrs. C. C. Harrison, Jr. The methods used by the Indians in making their embroidery were worked out by Dr. Gordon and the drawings were prepared by Miss Louise Baker.

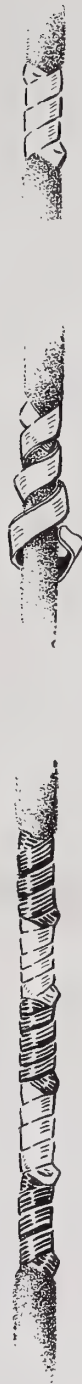
For sewing, the women of the Plains used sinew instead of fiber thread. Long broad bands of sinew from the neck or leg of one of the large mammals were dried and stored for future use. When needed a thread was pulled out by the teeth, softened in the mouth, smoothed out, twisted and rolled between the palms. No needles were used but holes were made with a bone awl. For sewing on borders the running stitch was used and for most other purposes the over and over stitch, but besides these ordinary stitches there were numerous ornamental stitches and other varieties used for mending purposes.

The quill worker's art is unique in America and therefore demands a word of explanation and description. It is obsolete today because



Showing part of thong cut away to give greater separation.

FIG. 75.



Showing method of fastening ends of quill.

FIG. 76.

II

I



Showing details of sleeve fringe and method of attachment.

FIG. 77.

of the early introduction of very small glass beads in a variety of colors which could be strung and sewed on the skin clothing to produce very much the same effect as that of the vastly more difficult quillwork. And besides the Indian has been compelled to adopt the white man's readymade clothing because of the disappearance of the animals whose skins formerly furnished the materials for dress and decoration. Most of all, the changed condition of his life in captivity on government reservations has robbed the Indian of his ambition; he no longer cares.

The women's work began after the men had captured the porcupines and brought them in. In some tribes the men also collected the materials and prepared the dyes. The sorting and coloring of the quills, the dressing of the skins, the drawing of designs and the embroidering were exclusively the work of women. The quills were carefully sorted according to size and length and stored in small cases made of the bladders of elk or buffalo. The dyes were compounded of roots, bark, buds or plants and a number of uniform colors secured; mostly green, blue, black, yellow and red. The natural white quill was used for borders and backgrounds in designs. Pure colors were preferred and no attempt made to produce a variety of shades.

Quills were never used in their natural round state nor were they split, as is the method used with bird quills, but they were flattened as needed by running the thumb nail along from end to end while they were held between the teeth. At best the quills were stiff and difficult to manipulate, requiring skill, technique and abundant patience. They were so short that only two or three stitches or wrappings on a thong could be made and it was necessary to secure and conceal both ends of each quill independently of the others and in such a perfect way that the stitching or binding would appear as one continuous band even though various colors were used in the design. One method of fastening the ends is seen in Fig. 76. The outer end of the quill is used first, leaving the narrow stiff end next the body for the final tuck. The wrapping of the thongs is done while the skin is wet.

In embroidering on skin, a very sharp bone awl is used to make the holes. The point of the awl is pushed through from the back and the quill pulled tight, leaving a bit of the end to be bent and pressed into the skin. The design is made of lines composed of a series of upright stitches lying tight together. The width of the

lines forming the designs determines the length of the stitch and these vary in width from one sixteenth to one quarter of an inch.

Many designs belonged exclusively to women and were invented by them. These designs appeared to the women in dreams and were supposed to be sent by the spider who was the original instructor of women in the art of embroidery. Many of the designs worked on children's cradles and garments were prayers for health, long life and protection.

No other art found in America made such a strong appeal to the Indians themselves as that of the porcupine quill embroidery. The Cheyenne, Arapaho and Sioux were the most noted quill workers but other tribes far outside of the habitat of the porcupine obtained quills by barter and used them in their own peculiar form of decoration. The Apache, Comanche, Kiowa and Wichita of the southern Plains area were unacquainted with the art of quillwork. The work has so deteriorated in the regions where it is still found that it would be impossible today to find a woman who could duplicate the beautiful work on our Cree dress.

Among Paul Kane's paintings in the Toronto Museum is one of Cun-ne-wa-bum, "One that looks at the Stars," a half breed Cree girl whom he met at a Christmas dance at Edmonton, Canada, in 1847. The painting is reproduced in his book *An Artist Among the Indians*, where the author says, "I was so much struck by her beauty, that I prevailed upon her to promise to sit for her likeness, which she afterwards did with great patience, holding her fan, which was made of the tip end of swan's wing with an ornamental handle of porcupine's quills, in a most coquettish manner." The dress she was wearing very closely resembles the one in Fig. 72, except that the quillwork is even more elaborate. Evidently the elegantly embroidered dress and the swan's wing fan enhanced the beauty of Kane's coquettish half breed maiden.

W. C. F.



A Marquesan war club.
FIG. 78.

ART OF THE MARQUESAS ISLANDERS

IN the year 1595, the Spanish admiral, Alvaro de Mendaña, sailing westward from Peru in command of an expedition sent out by the Viceroy, Garcia Hurtado de Mendoza, Marques de Cañete, discovered a group of islands lying about midway between the Peruvian coast and the great island of New Guinea on the western verge of southern Pacific waters. The name which he gave to the islands in honor of his patron the viceroy has survived in shortened form as Marquesas Islands. Nearly two hundred years passed before another European ship, Captain Cook's *Resolution*, dropped anchor in Mendañas harbor in the island of Tahuata, which the Spanish explorer had named Santa Christina. Both of these voyagers visited only the southern part of the archipelago. The northern islands, including Nukahiva, the largest of all the twelve islands in the two groups, were discovered by the American Captain Ingraham in 1791. Another American visitor, Captain Roberts, who arrived two years later, named these the Washington Islands. The islands of both groups are now usually known collectively by the name Mendaña gave to the southern archipelago.

They are of volcanic origin, lofty and rugged. In most cases there is a high central ridge buttressed on both sides by others less lofty enclosing between them parallel deep valleys opening on the sea. The inhabitants of each valley, the lower, seaward portion of which contains the only fertile ground, were constantly at war with their neighbors. Their inveterate feuds, resulting in frequent raids rather than pitched battles, produced a not inconsiderable portion of the food supply; for the Marquesans, before the pacification of the islands by the French following the hoisting of the tricolor in 1842, were incorrigible cannibals. To this fact, as will be seen, not a few of the objects from the Marquesas contained in the University Museum's collection, and illustrated here, bear witness.

The early visitors to the islands speak with one voice of admiration of the fine physical proportions of the Marquesan warriors, and it is not difficult to believe that they must have had considerable muscular force at their command. The war clubs which the warriors carried into battle (Figs. 78-82) were made of the exceedingly hard



Head of Fig. 78, showing details of carving.
FIG. 79.



Head of club, showing the subsidiary heads and faces.
FIG. 80.



The lip contours are so modified as to form a subsidiary face.

FIG. 81.



Side of a club head showing the full face formed by the combination of the two profiles, one on each side of the sharp edge of the notch above the cross piece.

FIG. 82.

and heavy wood of the *toa*, ironwood or casuarina. They were about five feet in length, topheavy with their massive heads and slender, tapering shafts, and must have required considerable strength and staying power to wield freely for attack or defense. This type of club suggests by its general outline a possible development from the paddle, which, in fact, in those seas, is a common weapon of hostile landing parties met by opponents on the beach. On this supposition it would be difficult, however, to account for the strongly marked transverse limb which divides the head of the club into two well defined parts, providing two distinct areas of ornament, which are, however, linked, as will be seen below, by a common feature of the whole plan of decoration. This plan is marked by three characteristic motifs. Primarily, the whole head of the club is treated as a human head. On this the eyeballs and nose are indicated by miniature representations of other heads in prominent relief, and the mouth, below the transverse limb, by a grouping of the ears, eyes, and nose of another face made into a single unit of the whole scheme by a singularly skilful combination of graceful curves flowing into one another, the coalescence being assisted by the extreme lowness of the relief. Next, by an extension of this principle of repetition *in petto* of the chief motif, but without its application to the representation of essential features, other small faces are placed at three different points on the periphery of the upper part of the head of the club—at the top and in the notch at each side immediately above the ends of the transverse limb. Each of the last two appears half on either side of the sharp edge to which the sides of the club are here pared down, and is thus turned in a direction at right angles to that in which the other heads look out (Fig. 82). Finally, there are two bands of conventional decoration below the crosspiece and separated by the composite mouth detail described above. The two broad sides of the club head differ only in the arrangement of the details of these bands, the chief elements of the ornament being in general the same—circles or ovals, sometimes open, or segments of these, combined with oblong figures and incomplete scrolls. These elements, or portions of them, sometimes appear within the inner oval of the large eyes between the two bands (Fig. 79). All these details are very lightly incised. They are reproductions of similar designs which the Marquesans tattooed upon their bodies. Undoubtedly they are symbolic; it has even been supposed that they are of the nature of hieroglyphs. But we have not the key to their meaning, and the possibility of its complete



Marquesan warrior's fillet of coconut fibre with an ornament of white shell and tortoiseshell.
FIG. 83.



Amulets made of cylinders of human bone.
FIG. 84.

recovery is slight. Of such clues to their meaning as remain, one may be mentioned here.

The fillets worn by Marquesan warriors were ornamented with one or more discs of haliotis shell. To these discs were applied others of tortoiseshell, smaller, and decorated *à jour* with various designs. Sometimes two large hooks also of tortoiseshell projected from the rim of the latter (Fig. 83). We are told that these hooks are also represented in the conventional ornament of the clubs, and were tattooed on the neck of the avenger of blood. In some cases this representation is obvious enough. In the specimens illustrated here it probably appears in some of the scroll like details of the lower part of the club heads.



Back view of some of the amulets shown in Fig. 84.

FIG. 85.

We know the significance of this hook, the badge of the warrior. It was a threat to the enemy, a reminder of the unseemly and terrible fate that awaited the vanquished. It was the symbol of the rite of human sacrifice performed at celebrations of victories and on various other occasions, such as the death of certain priests, when a god had to be propitiated or when formal thankoffering was due. From the bough of a great tree within the *moraï* or sacred enclosure the victim was suspended by his mouth from the prototype of this symbolic hook.

A wrapping of cord made of the fibre of coconuts attaches to the handle of another Marquesan club in the Museum collection a number of strands of human hair, a further indication of the relation between war and the food supply of gods and men. Human hair was employed by the Marquesans, however, for various purposes of personal decoration not always necessarily related to these cere-



The bone cylinders sometimes enclosed tresses of hair.
FIG. 86.

monial practices, except in so far as the practices represented the, at least partial, source of the supply of hair. Men of rank wore capes, short kilts, armlets, and anklets made by attaching locks of hair to cords by which these ornaments were fastened about their bodies and limbs.

From the bones of the victims were fashioned various articles, the employment of which combined magical with ornamental and practical purposes. Such were the carved bone rings through which were sometimes passed tresses of hair (Figs. 84-86). It has been stated that these were occasionally worn merely as ornaments by the men, and that the tresses were taken from the heads of their wives. But they had not always so innocent an implication; sometimes, at least, they were worn by the avenger of blood, in order that he might constantly be reminded of the vengeance he was sworn to take. The rings were also attached to the conch shells which served as war trumpets. In this case, too, they were associated with the clustering locks of hair with which the trumpets were decorated (Figs. 87-89). The plaited cord of which is formed the gourd sling (Figs. 90, 91) passes through two of these rings. Slender rings of bone or whale ivory, corrugated, are found on the cords of this and on the amulet, Fig. 86.

Plaited strands of hair formed into a ball surmount the wand (Fig. 92) which was carried by a chief on occasions of ceremony, the symbol of his rank or the mark of authority. Below the ball the staff is encircled by a short tube of woven fibre. This is decorated with a design formed by weaving hairs into the fabric. In the example pictured here the chief feature of the design is a lizard; in other cases it is a human figure, or there may be nothing but the chequer pattern which is secondary in this specimen. In various parts of Polynesia lizards are regarded as symbols or incarnations of divinity, or as the hosts of spirits of the departed. Since chiefs partook by inheritance of the nature of divinities, the lizard would be a fitting symbol of their power.

Of bone and of whale ivory, as well as of wood, were made the richly carved handles of the fans which were carried by people of rank (Figs. 93-101). The small pointed implements of bone or ivory shown in Fig. 102, the butt ends of which terminate in a single human figure or in two placed back to back, always conventionalized in the manner typical of the Marquesan artificers in wood and bone, were employed in piercing the lobe of the ear for the reception of ornaments of various kinds. For these and for some other objects in the collection the



War trumpet. A conch shell with a sling of plaited coconut fibre and an ornament of human bone and hair.

FIG. 87.



Another view of the war conch, Fig. 87, showing the hole made for the mouthpiece.
FIG. 88.



Detail of the ornament of the bone cylinder attached to the war conch, Figs. 87 and 88.
FIG. 89.

native name, or rather a description of the object in Marquesan, was obtained by the collector. In this case it is so tersely comprehensive as to be worth quoting here: *taa tui puaina ketua*; *taa*, a thorn or point, *tui*, to beat or pound, *puaina*, ear, *ketua*, bored. It could hardly be put more concisely; one hopes for the sake of the patient that all was as quickly done as said. Yet, if *tui* was used advisedly with full appreciation of its second meaning, especially, it must be admitted that the hope is not particularly well founded.



The bone cylinders were also used to decorate the slings of coconut fibre in which gourds containing water or food were carried.

FIG. 90.

The teeth of the cachalot or sperm whale provided the material also for some of the ear ornaments (Fig. 103) worn by the wives and daughters of chiefs. The shaft which projects from the sides of these was passed through the opening in the lobe of the ear and secured in place by means of a button of bone or shell or wood fitted on to the end.

It is said that the grotesque figures in recognizably human form which are a constant feature of the carvings in wood or bone or whale ivory, as well as the independent figures, large or small, of wood or



Back view of the bone rings forming part of the decoration
of the gourd sling, Fig. 90.
FIG. 91.



Head of a chief's staff.
FIG. 92.

stone, are representations of the minor gods, who are in fact deified ancestors. While this is no doubt true in general, it seems likely that the groups of minute figures which appear in the ear ornaments are an exception. That the conventions which are universally observed in the large carvings—the disproportionately large head with round staring eyes and flattened nose with flaring nostrils, the short body



Fan with handle of whale ivory.

FIG. 93.

with arms bent at the elbow and hands resting on the abdomen, or, in some cases, with one hand raised to the lips—that these conventions are for the most part neglected in the case of the ear ornaments is not in itself decisive, for the restrictions imposed by the smallness of the space available may have led to this departure from established rule. This limitation and the fact that in most instances the figures are arranged in groups engaged in some kind of vigorous action may have



Details of handle of fan, Fig. 93; front view.
FIG. 94.

led to their being represented usually in profile, and, though the carving is *à jour*, to the use of a technique which is rather that of a draughtsman than of a sculptor.

What kind of activities are here represented? Definite information is lacking on this point as it is concerning most of the facts or ideas that the Marquesan carvings symbolize or represent. Our knowledge of the aboriginal customs also leaves much to be desired in the matter of coherence of details and of definiteness. Yet an examination of these minute carvings seems to show that some of them are intended, if not to illustrate directly, at any rate to symbolize, certain of these customs.

The two small figures at the top of Fig. 103, the treatment of which is, by the way, markedly more plastic than that of the others of this group, are shown supporting two cubical objects on a flat surface. A comparison of this with the two pairs of ornaments at the bottom of the illustration reveals these objects as human heads. In connection with what seems to be the formal presentation or offering or depositing of heads here depicted it is interesting and suggestive to read the following account of customs associated with the human sacrifices and the service of the temple or *morai*. "The *Mo'a*," we are told, "were the bearers of idols. They guarded the victims . . . , strangled them, prepared the heads, were, in general, the assistants, sometimes the messengers of the priests" [Dr. Tautain, *L'anthropophagie et les sacrifices humains aux Iles Marquises*, *L'Anthropologie*, VII (1896), p. 448]. "The head [of a victim], after having undergone a process intended to preserve it and especially to keep the hair on it, was placed on an altar and kept there for a very long time" [loc. cit., p. 446].

The ear ornaments in the second and third row from the top of Fig. 103 and the left hand member of the next pair but one below have an important feature in common. The figures are highly conventionalized and fragmentary and it is practically impossible to unravel all the tangled detail of posture and action; but it is clear in several cases that there is a figure at the bottom of the group clutching and being clutched by the fingers or toes of the other figures, who are also clutching, apparently struggling with, one another, and at the same time holding down the prone figure. Several of the upright figures have at first sight a curiously birdlike appearance, being apparently provided each with a long bill. But closer examination shows that this member terminates in a hand; it is not



Details of handle of fan, Fig. 93; side view.
FIG. 95.

a bill nor a proboscis, but an arm, a severed limb held in the mouth, in all probability. That there is no line drawn across it to mark the place where the severed end enters the mouth is not especially significant in view of the small size of the carvings and the length to which stylization of the figures has been carried.

Let us see what light is thrown on this grouping of the figures, so far as we have been able to determine it, by the pertinent portion of an account of the procedure at cannibalistic feasts. "Everybody," we read, "threw himself upon the corpse to make sure of a portion.



Bone fan handle; front and side views.

FIG. 96.

If a man had no [bamboo] knife, he would tear the skin loose with his teeth in thick gobbets from around the nipple and could then, I was assured, rip the whole arm off with a single tug" [K. von den Steinen, *Reise nach den Marquesas Inseln*, reprinted from *Verhandlungen der Gesellschaft für Erdkunde*, Berlin, 1898]. It is noteworthy that one of the figures on the fan handle shown at the left in Fig. 101 is carrying a severed arm over his shoulder.

Whatever may have been the original connection between cannibalism and human sacrifices in Polynesia generally, there is no doubt about their close association in the Marquesas. Victims for offering to the gods were obtained from neighboring settlements at the instance of the superior priests. On the death of one of these priests, three victims had to be secured. Two of these were hung up



Fan handle of whale ivory; front and side views.

FIG. 97.

in the morai—the wasting of the flesh on the bodies was equivalent to its consumption by the god to whom the offering was made; the third was cut up and eaten by those privileged to be at the ceremony, the *Tauas*, or superior priests, persons of distinction in the community, their relatives, the captors of the victims, and such other persons as the *Tauas* might summon. Apart, however, from such occasions as these, cannibalism was practised by the people of Nukahiva, in the case of enemies slain or taken in battle; and, in times of scarcity of food, men would slay and eat even members of their own families.



Fan handle of whale ivory; front view and that of both sides.
At the butt the figure of a pig.

FIG. 98.

The feasts of the profane seem to have been held, not in the morai of the Tauas, but in large paved or leveled open spaces which were devoted to public festivities of various kinds.

The large wooden figure, Fig. 104, was taken from a spot near the valley of the Taipi, the "Typee" of Herman Melville's classical account so named of Nukahiva in the forties of the last century. These figures of lesser divinities were set up in the morais. Sculpturally, they exhibit the same general characteristics as the smaller figures in wood or bone or stone; but it is interesting to note that as the dimensions of a figure decrease the importance of the head is preserved at the expense of other portions of the body, the legs especially tending to dwindle, until in some of the smaller figures of bone they practically disappear, while the head retains its impressiveness through the grotesquely disproportionate largeness of its size.



Wooden fan handles.
FIG. 99.



Wooden fan handles.

FIG. 100.



Wooden fan handles. The two on the right show animal forms—probably heads of pigs—at the butt and at the opposite end, respectively, of the handle proper.

FIG. 101.



Awls employed for piercing the lobe of the ear.
FIG. 102.

On each cheek this figure bears a curious mark carved in relief, presumably a representation of similar marks tattooed on the faces of the men. These two marks are quite similar in their general outlines, the main tracery forming a somewhat irregular cross. The details of the filling between adjacent pairs of arms are slightly different in the two cases. This cruciform symbol appears again and again in slightly varying forms on the objects we have been considering, all of which, as we have seen, have a more or less direct connection with the ritual sacrifice of human beings. It occurs on the back of the head of the figure carved on the bone cylinder attached to the war trumpet (Fig. 87); in the same position on one of the figures on the cylinders which decorate the sling for carrying a calabash (Fig. 91); between the hands on the abdomen of that figure; on two, at least,



Women's ear ornaments of whale ivory and bone.
FIG. 103.

of the ear ornaments (Fig. 103); and twice, in a design which may, perhaps, be its prototype, on the narrower sides of one of the fan handles, between the two human figures which form the principal feature of the ornament (Fig. 98). In this last case it appears to be constituted by the combination of four elements each of which suggests the regular conventional method of representing a hand [Cf. Figs. 84, 94, 97, 104, etc.]. It occurs also sometimes on the clubs.

That the use of this symbol in all these classes of articles, and others besides, indicates a connection, probably magical, with the rites to which their employment is in one way or another related seems certain. The precise nature of that connection remains doubtful. The cruciform mark, whatever its exact significance in the instances of its use illustrated here, a significance probably not less bloody than that of the hook, exercised its magical influence on certain occasions on the side of mercy. "When, living or dead, an individual had been captured as victim, if his family could find out to what district he had been taken, it was possible for his wife, daughter, or mother, perhaps other relatives, to pay him a last visit. For that purpose they bared their bodies completely and daubed their faces with charcoal, whence the name *kopeka kaahu ahi* which was given to them. This costume assured them freedom to approach the victim and to return home safe and sound, without having undergone any insult or ill treatment" [Tautain, loc. cit., p. 451]. The interpretation given of the native words in this passage "[adorned with] many crosses of charcoal or soot," is probably not quite correct, the grouping of the syllables is apparently faulty: *kaahu ahi* stands presumably for *ka (?ta) auahi*. If this is so, the meaning would be simply "cross of smoke (*scil.* soot)." Dr. Tautain adds, "and in fact the daubing in question took the form of a 'cross'" [loc. cit., footnote].

The fan handles (Figs. 93-101) are fully carved on all sides. The full face view of the principal figures represented is seen on the narrow sides. The wider sides are filled in with subsidiary ornament, chiefly, human faces, parts of the body, designs resembling those composing the bands of formal ornament on the clubs. In one case a two headed seated figure appears (Fig. 96). Some of these figures have one hand raised to the lips (Figs. 95, 99, 100).

This latter feature appears also on a figure represented as in a seated posture (Fig. 106), which has probably been cut off from the shaft of a canoe ornament similar to Fig. 105. Objects like the latter



Wooden figure of a god from the Island of Nukahiva.
FIG. 104.



Canoe ornament; front and side views.
FIG. 105.

have been described as supports for the yards of canoes. But the triangular matting sail of a Marquesan canoe required no yard that would cross the mast at right angles and thus rest naturally in such a crotch as is provided by this object. On the other hand, Captain Cook in describing the canoes of these islanders speaks of the head, i.e. stem, projecting "horizontally, and . . . carved into some faint and very rude resemblance of a human face" [Voyage II, i, p. 311. Lond. 1777, W. Strahan and T. Cadell]. This corresponds with the carving



Figure from a canoe ornament; front and side views.
FIG. 106.

of the portion of this object which would project over the water if it were attached to the stem or stern of a canoe. The holes in the wood provided for attaching it are at the wider end where the figure is seated. Lisiansky, writing in 1804, speaks of "a crooked piece of wood" fastened to the stern, "through which runs the sheet of a triangular sail, made of matting" [A Voyage round the World . . . in the Ship Neva, London, 1814, p. 90]. According to the account given of the Marquesan canoes by Roblet, the surgeon who accompanied Captain Marchand in the *Solide*, "their stem is terminated by a projecting piece, which imitates very imperfectly the flattened head of a



Foot rest from one of a pair of dancing stilts. Front and side views.
FIG. 107.

fish, or rather the under jaw of a pike" [A Voyage round the World performed by Etienne Marchand (1790-1792), Vol. I, p. 118. Lond. 1801]. At any rate the projecting figure set at an acute angle to the shaft appears better suited for hitching a rope over than for the support of a yard. This object is most likely an ornament like that described by Roblet, taken from a canoe model.

The peak which crowns the head of this figure gives it an outline differing both from the others hitherto described or illustrated and



The straight edge rested against the stilt, to which the support for the foot was bound with cord made of coconut fibres.

FIG. 108.

from those which form the foot rests which were attached to the stilts used by the Marquesans (Figs. 107-112).

Although he misunderstood the purposes for which the stilts were employed, the editor of the notes made by Marchand and his companions Roblet and Captain Chanal has given an excellent description of a footrest taken to France by Chanal. It applies in most particulars to the examples illustrated here. "Each stilt is



The upward curving portion of the foot rest, carefully rounded off from side to side, received the arch of the foot.

FIG. 109.

composed of two pieces: the one, of hard wood and of a single piece, may be called the *step*; the other is a pole of light wood, more or less long, according to the stature of the person who is to make use of it. The step is eleven or twelve inches in length, an inch and a half in thickness; and its breadth, which is four inches at the top, is reduced to half an inch at the bottom. The hind part is hollowed out like a gutter or scupper, in order to be applied against the pole, as a check



Foot rest for stilt.

FIG. 110.

or fish is, in sea-terms, applied against a mast; and it is fastened to the pole . . . by sennit or lashings of cocoanut bass: the upper lashing passes through an oblong hole, pierced in the thickness of the step; and the lower one embraces, with several turns, the thin part, and confines it against the pole. The projecting part, which I should call the *clog*, and on which the foot is to rest crosswise, bends upwards as it branches from the pole; this clog is an inch and a half in thickness; and its shape is nearly that of the prow of a ship, or of a *rostrum*, or, if the reader please, that of a truncated nautilus. The under part of this sort of shell is slightly striated throughout its whole surface,



Foot rest for stilt.
FIG. 111.

and the *striae* commence from the two sides in order to join in the lower part on the middle, and there form a continued web; its upper surface is almost flat for receiving the foot, and it is in like manner ornamented with *striae* of no great depth, which form regular series of salient angles and of reentering angles. The clog is supported by a bust of a human figure in the attitude of a Cariatides (*sic*), wrought in a grotesque manner, which greatly resembles a support of



A pair of foot rests from a child's stilts.
FIG. 112.

the Egyptian kind; it has below it a second figure of the same kind, but smaller, the head of which is placed below the breasts of the large one; the hands of the latter are placed flat on the stomach, and its body is terminated by a long sheath, in order to form the lower and pointed part of the step. The arms, as well as the other parts of the body of the two figures, are angularly striated, like the upper face of the clog" [Marchand, I, 119-120]. This answers generally to the appearance of the University Museum's specimens. None of the latter examples, however, has a double figure. The author of this description supposed that stilts were used by the Marquesans as a means of getting about during inundations in the rainy season. Langsdorff [Voyages and Travels in Various Parts of the World during the Years 1803-1807, p. 151. Carlisle, Pa. 1817] justly observes that, "if it should be alleged that the frequency of inundations, and the necessity of keeping up an intercourse with each other, has led them to [the pursuit of stilt walking], I answer, that people who always go naked, and are swimming about all day long, have no great reason to be afraid of wetting their feet, and cannot therefore make use of such a means of keeping them dry from necessity." He might have added that the nature of the surface of the islands precludes any possibility of extensive flooding of large areas. Langsdorff [loc. cit.] gives a concise account of the use to which these stilts were put. "Next to dancing, one of the favourite amusements among these people is running on stilts, and perhaps no nation on earth can do this with so much dexterity as the inhabitants of Washington's Islands. At their great public festivals they run in this way for wagers, in which each tries to cross the other, and throw him down; if this be accomplished, the person thrown becomes the laughing stock of the whole company. We were the more astonished at the dexterity shown by them as they ran on the dancing place, which, being paved with smooth stones, must greatly increase the difficulty. Children are thoroughly habituated to this exercise, even by the time they are eight or ten years old." Further: "It seems that the people of Nukahiwa . . . represent in their pantomimic dances most of the common actions of life, as fishing, slinging stones, running on stilts, swimming and the like" [op. cit., p. 143]. The two footrests shown together in Fig. 112 are from a child's stilts. The dancing places referred to are the levelled or paved areas in which public festivities were celebrated, to which allusion has already been made.

H. U. H.

NOTES

GIFTS.

The following gifts have been received.

A collection of Greek and Etruscan pottery and bronzes from Miss Nina Lea, in memory of her father, Mr. Henry Charles Lea.

A collection of plaster impressions of cameos and intaglios from Mrs. William L. McLean.

An Egyptian scarab from Mr. James B. Bonner.

Two United States coins from Mr. A. J. County.

A Mexican poncho from Mr. C. M. P. Herring.

Ancient Peruvian textiles from Mr. J. Alfonso de Gary.

An Apache basket from Dr. William Pepper.

A collection of Rio Grande pottery from Mr. Otto Mallery.

A birdskin coat from Alaska from Messrs. Van Horn & Co.

A group of North American and South Sea Island baskets from Mrs. James E. Hood.

A Hupa Indian basket from Mrs. Edgar F. Smith.

A suit of Japanese armour from Mr. Lindley Johnson.

A group of Japanese models from Mrs. George N. Macauley.

PURCHASES.

Section of Oriental Art.

Five Persian manuscript books, 17th century.

A piece of Persian brocade.

A large South Indian stone sculpture representing Brahma, made in the 11th century.

A South Indian stone sculpture representing Vishnu, made in the 11th century.

Section of Primitive Art.

A carved ivory club of the Yakutat Indians.

A collection of North American ethnology.

A collection of bronzes, wood carvings and ivory carvings from Great Benin.

An African carving.

A Bogobo beaded knapsack.

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A Hawaiian royal feather robe and cape.

A Maori feather cape.

A collection of tapa cloth from Polynesia, Micronesian mat and belts.

OTHER ACCESSIONS.

From Prof. Flinders Petrie, on behalf of the British School of Archæology in Egypt, the Museum has obtained a consignment of objects discovered in the recent excavations at Gurob and Lahun.

DOCENT SERVICE.

Miss Helen E. Fernald has been appointed Chief Docent. With her assistants Miss Fernald has organized a series of guide talks in the galleries which will be given at stated hours in the afternoons. The calendar of these talks may be obtained at the Information Desk.

PALESTINE AND EGYPTIAN EXPEDITIONS.

Mr. Clarence S. Fisher conducted excavations at Beisan in Palestine during the summer and autumn from June 20 to October 15. The work began on the Acropolis and reached to a level corresponding to the early Christian period. Among the objects found were mosaic pavements, Arabic inscriptions and an Egyptian historical stela.

In November Mr. Fisher returned to Egypt and began excavations at Thebes where a new concession has been granted by the Egyptian Government to the University Museum on behalf of the Eckley B. Coxe Jr. Egyptian Expedition.

Mr. Ernest Mackay, lately Government Inspector of Antiquities for Palestine, has joined the staff of the Egyptian Expedition.

PUBLICATIONS.

A new volume of historical documents in the Babylonian Section of the Museum by Dr. Leon Legrain, Curator of the Babylonian Section, is now in press.

A volume by Mr. Clarence S. Fisher on the excavations of the Eckley B. Coxe Jr. Expedition at Gizeh is ready for the press.

EGYPTIAN SECTION.

The Egyptian Section of the Museum will be closed during the months of January and February for painting and repairs to the gallery and the reinstallation of the collections.

LECTURES.

During the autumn of 1921 the Saturday afternoon lecture course was as follows:

- November 5. William Curtis Farabee, Peru Before and After the Incas.
- November 12. Charles K. Edmunds, In the Footsteps of Marco Polo.
- November 19. Robert Cushman Murphy, The Way of the Sperm Whaler.
- November 26. George Byron Gordon, Constantinople and Sancta Sophia.
- December 3. Henry E. Crampton, Guam and the Ladrones.
- December 10. George A. Reisner, History of Egyptian Art.
- December 17. Henry E. Crampton, Siam and Java.

On Sunday afternoons the following lectures were given:

- December 4. George Byron Gordon, Constantinople.
- December 11. George Byron Gordon, Constantinople, the Capital of the Sultans.
- December 18. George Byron Gordon, Constantinople, the City of the Cæsars.

THE MUSEUM JOURNAL

NEW MEMBERS.

The following members have been elected:

CONTRIBUTING MEMBERS.

Walter I. Cooper

J. N. Pew, Jr.

SUSTAINING MEMBER.

Dr. Cheeseman A. Herrick

ANNUAL MEMBERS.

Dr. Frederick W. Allen
James H. Babcock
Mrs. Ellis W. Bacon
Erskine Bains, Jr.
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Robert J. Berryman
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Mrs. R. H. Neville
Edwin C. Nevin
Rev. Jeremiah D. Nevin
Alfred E. Pfahler
Miss Margaret D. Pfahler
Lazar Raditz
Arthur R. Spencer
Joseph A. Steel
William Albert Sullivan
Mrs. Justice M. Thompson
Max Voigt

Mrs. Albert Wolf

FORM OF BEQUEST

I give and bequeath to the Trustees of the University of Pennsylvania the sum of.....dollars, in trust for the uses of the University Museum. (Here, if desired, specify in detail the purposes.)

SPECIAL NOTICE

In order that The University Museum may give appropriate recognition to the substantial gifts which have been already received, and which will hereafter be donated or bequeathed for the development of its resources and the extension of its usefulness, the Board of Managers have adopted the following classification for contributors and members, and have resolved that the names of the donors of aggregate sums of \$25,000 and upwards, in cash, securities, or property shall be inscribed upon a suitable tablet or tablets, to be properly displayed in the Museum.

There shall be five classes of Contributors designated as follows:

<i>Benefactors,</i>	who shall have contributed the equivalent of \$50,000
<i>Associate Benefactors,</i>	" " " " " " " 25,000
<i>Patrons,</i>	" " " " " " " 10,000
<i>Associate Patrons,</i>	" " " " " " " 5,000
<i>Fellows,</i>	" " " " " " " 1,000

There shall be four classes of Members designated as follows:

<i>Life Members,</i>	who shall contribute \$500
<i>Contributing Members,</i>	" " " 100 annually
<i>Sustaining Members,</i>	" " " 25 "
<i>Annual Members,</i>	" " " 10 "

Contributors and Members are entitled to the following privileges: admission to the Museum at all reasonable times; invitations to receptions given by the Board of Managers at the Museum; invitations and reserved seats for lectures; the MUSEUM JOURNAL; copies of all guides and handbooks published by the Museum and free use of the Library.

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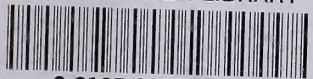
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